Network camera

Installation instructions

TV7210
TV7217

Preface

Dear Customer,

Thank you for purchasing this Network camera of the DIGI-LAN series from Security Center. You made the right decision in choosing this state-of-the-art technology,

which complies with the current standards of domestic and European regulations. The CE has been proven and all related certifications are available from the manufacturer upon request.

To maintain this status and to guarantee safe operation, it is your obligation to observe these operating instructions! In the event of questions, please contact your local specialist dealer.

This Network camera is used for object surveillance. The recorded video signals are transmitted to a computer digitally via the connected network. The computer software permits simultaneous recording of up to 16 connected video signals. Data storage is subject to local national data-protection guidelines. Via the Internet Explorer, you have worldwide access to installed cameras (password-protected).

Precautions

The Network camera and connected components must be kept free of moisture (cellars and similar surroundings are to be strictly avoided). Use of this product for other than the described purpose may lead to damage of the product. Other hazards such as short-circuiting, fire, electric shock, etc., are also possible. The equipment is designed for operation using a Class 2 12V DC transformer. No part of the product may be changed or modified in any way. Connection to the public power network is subject to country-specific regulations. Please be aware of applicable regulations in advance.

To avoid fire and injury, please observe the following:

Securely fasten the device at a dry location in the building.
Ensure sufficient air circulation.
Do not expose the device to temperatures less than 0°C or more than 35°C.
The device is designed for indoor use only.
Humidity must not exceed 85% (non-condensed).
Ensure that the voltage is disconnected when performing work on the device.

Please observe the following regulations to ensure trouble-free operation of your device.

The Network camera is supplied by a 12V DC transformer.
The transformer should be connected to the 230V AC building mains by means of a separate, electrically protected line.
Connection work to the building mains is subject to country-specific regulations.

General:

Improper or careless installation work may lead to faults and poor image quality. Therefore please read the instructions very carefully and follow the installation instructions for lines and components precisely.

The manufacturer reserves the right to make technical modifications at any time.

Before using this product

The use of surveillance equipment may be forbidden by law in some countries. This Network camera is not only high-quality web camera but can also be used as part of a flexible surveillance system. Before using this equipment, make sure that all your surveillance activities are completely legal.

Before installation, check the product for completeness (page 5: Scope of delivery). Read the installation instructions before installing the Network camera. Read the "Installation" chapter carefully and follow the instructions contained in it to avoid damage caused by faulty assembly or incorrect installation. This will ensure that the equipment goes into operation correctly for the intended purpose.

Appendixes A and B (Troubleshooting, FAQ) contain possible solutions to problems occurring during installation and configuration.
The installation instructions describe different usage scenarios of the Network camera. The chapter "URL Commands of the Network camera" is intended to help professional users design their own homepage or integrate the camera with web servers.

Sections marked with ⚠ contain special hints and advice for the user. Ignoring this advice can result in damage to the equipment or injury.

Contents

Scope of delivery

Network camera

Lens

Antennas (only TV7211,
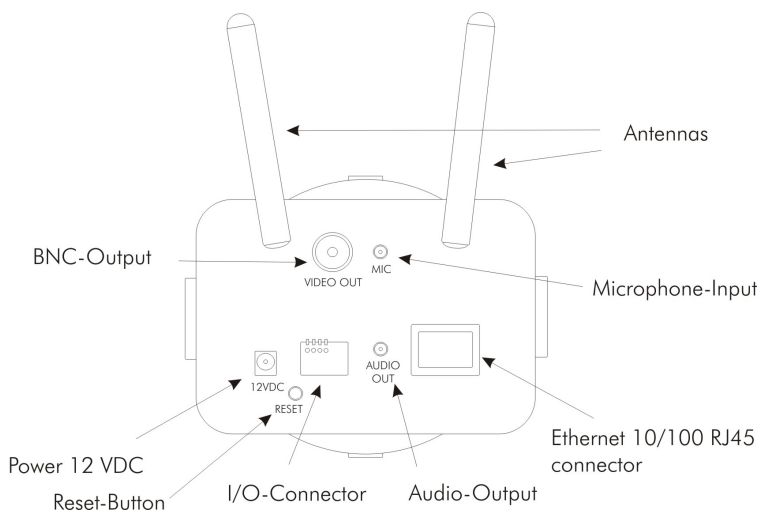TV7213, TV7215, TV7217)

Transformer

Camera mount

Software CD

Installation instructions (on CD)

Hardware installation

Make sure that all accessories and articles listed above are present in the scope of delivery. Depending on application, an Ethernet cable may be required. This Ethernet cable must meet the specifications of UTP Category 5 (CAT 5) and must not be longer than 100 meters.

⚠️ **To prevent the risk of electric shock, first connect the socket of the transformer to the security network camera before inserting the transformer into the mains socket.**

When the camera is switched on, it runs a self-test, and the Power/Activity LEDs flashes blue and red. If this self-test completes successfully, the LED flashes blue and the Network camera is ready for you to enter an IP address. After you enter an IP address, the blue LED flashes once every second. If the self-test is not successful, the red LED flashes several times. For troubleshooting hints, see Appendix A.

The network camera will first detect Ethernet. If it does not connect to Ethernet, the network camera will try WLAN. During the searching and connecting process to the wireless access point or station, the LED of the network camera will keep red. Until the network camera is connected to the other wireless device, the LED wil become blue and flash. Operating in either network mode, the blue LED will flash every second as heartbeat to indicate alive.

Installation in Ethernet

Make sure the Ethernet is firmly connected to a switch. After attaching the Ethernet cable please plug in the power adapter. If the LED turns off the be steady blue after self test, you can go to software installation. If the Ethernet is not available, the network camera will switch to wireless LAN mode.

Installation in Wireless LAN

If the Ethernet is not available while power on, the network camera will search for any access point with SSID "default". Once an access point is found, the LED will turn green to wait for installation. If the network camera environment cannot meet the default settings, install the network camera in Ethernet to proceed with wireless LAN configuration.

⚠️ Consult your dealer for the correct installation of peripheral devices.

The Network camera is equipped via an I/O terminal block with a digital input and a relay for device control. At Pin 3 and Pin 4, an external digital input signal can be processed, whereby the voltage state is monitored in the start phase at **LOW**. The output (Pin 1and Pin 2) can be used for switching external devices on and off.
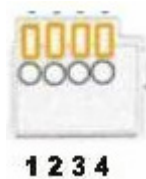
| 1	RELAY	OUTPUT (output status open)
2	RELAY	OUTPUT (max. 1A, 24V DC)
3	DI+	INPUT (max. 50mA, 12V DC
4	DI-	INPUT (output status of DI is low)

First access to Network camera

Setting the IP address

To set the IP address of the camera:

Use a network cable to connect the Network camera to your computer network.
(The simplest way is to connect the Network camera direct to your PC using a cross-link cable.)

If your PC is not yet integrated into a network, you first have to configure it for the network application. Do this by opening the **Properties** page for your network.
(This also applies if the camera is connected to the PC via a hub or switch.)
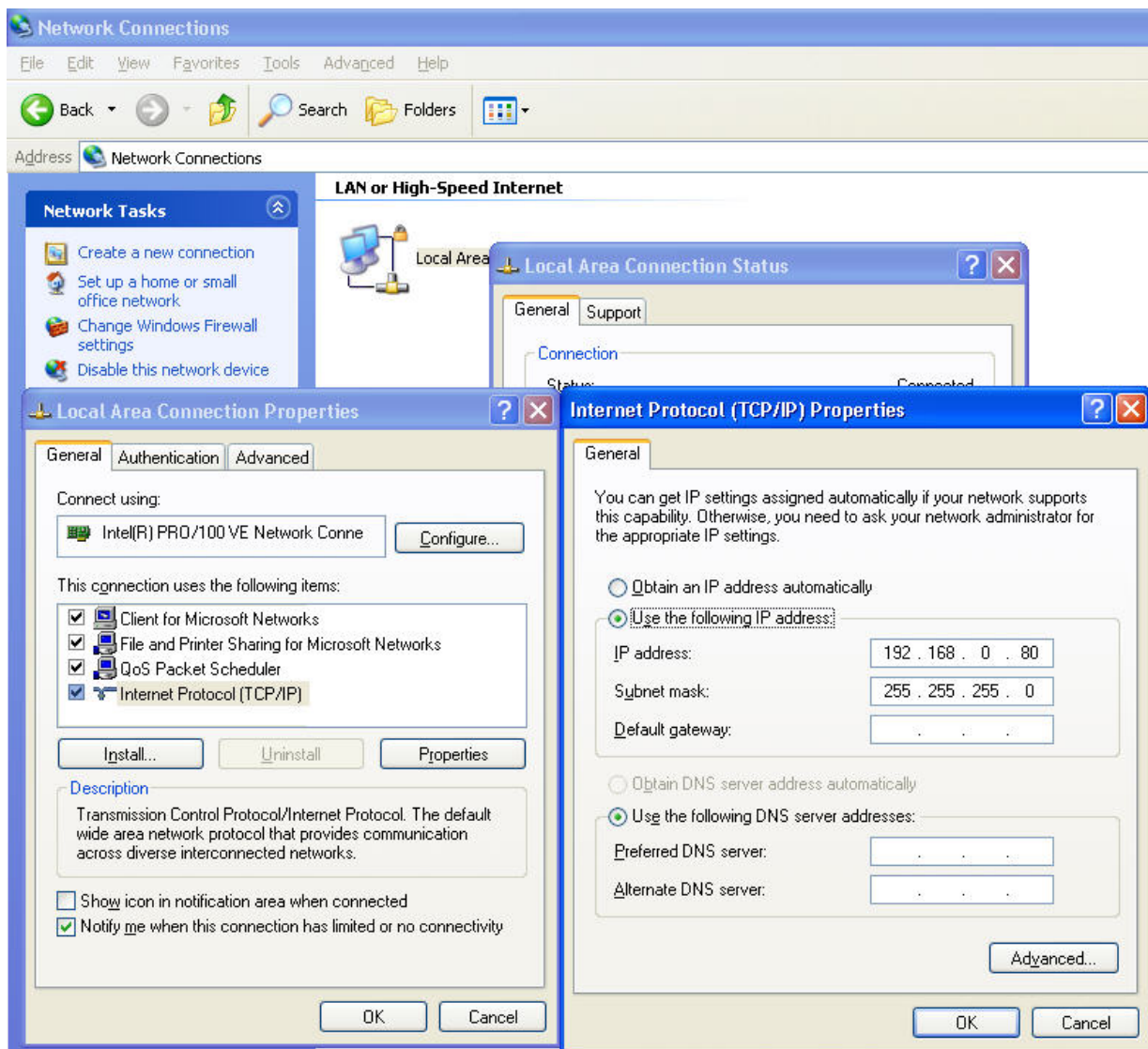
1. Click **Network Connections** ▶, select **Local Area Connection** and open the **Properties** page of the ☑ **Internet Protocol (TCP/IP)**.

2. Enter a fixed IP address and subnet mask
   (e.g.: 192.168.0.80 and as subnet mask 255.255.255.0).

- The network connection of your PC is now configured.

3. Now start the Installation Wizard from the software CD supplied.

4. Follow the installation instructions of the Installation Wizard.

5. If installation is successful, start the program under Programs/Installation Wizard.

6. Following the program start, the Installation Wizard automatically searches for a connected network camera.

7. If no camera is found in the first search, click **"Search"** for a new search.

Note:

The IP addresses shown in the "Current IP Address" field reflect those on the local network. They may be from the DHCP server. If there is no DHCP server, the camera will try to find a free IP address (this takes from 15 seconds to 3 minutes, depending on the LAN status). The method of finding an IP address is seeking from 192.168.0.99, to 192.168.0.254. If any of the address inside this range is free, the network camera will be assigned to this IP address, and its subnet mask would be 255.255.255.0. If none of the addresses is free, the network camera will try the range from 192.168.0.2 to 192.168.0.98. After an IP address is assigned to the camera, the "Activity" status LED blinks.

Note: If no camera is found via the manual search, change the network settings of your PC as described in the instructions.

8. Select one of the camera models found.

9. Click **"Setup"** to enter camera setup mode. **If a password is required, use the device serial number (no spaces, uppercase letters only).** You can change the hostname, the administrator password and the date/time settings of the camera. **If you cannot access the settings, check the IP addresses of your network adapter and your network camera. The IP addresses must be in the same subnet area.** If necessary, change the IP address of the network adapter (page 7).

10. Now click **"Next"** to change the IP address of your network camera.

If you use a router in your network, enter this IP address (gateway) in the **Default Router** field.

11. If you disable **"Reset IP address at next boot"**, you do not have to reassign the IP address of this camera following a power failure. Otherwise, you have to reassign the IP address after every camera restart.

12. Click **"Next"**.

Now press the button "Skip" to skip the wireless LAN setup at this point. You will find more information under "WLAN configuration".

13. Follow the instructions on the screen to save or change your settings.

The Installation Wizard is finished. Click **"Previous"** to change your settings. Click **"Apply"** to save your input and transfer it to the selected device.

14. Click **"Add"** to add a network camera direct via the IP address or its domain name. You need this only if the camera was not found by the automatic search.
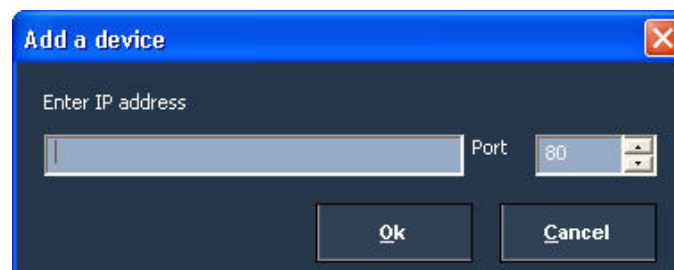
15. Click **"Remove"** or **"Uncheck all"** to remove one or all network cameras from the menu.

16. Click **"Connect"** to set up a link to the selected network camera via the Internet Explorer.

<u>Access to the network camera via the Internet Explorer</u>

Defining a password to prevent unauthorised access

For security reasons, the administrator should define a new password immediately. After the new administrator password is stored, the Network camera asks for the user name and password every time it is accessed. The administrator can define up to twenty (20) user accounts. Every user has access to the Network camera, but not to the system configuration. Some system-critical functions are reserved for the administrator, such as system configuration, user administration and upgrading software programs. **The administrator's user name is always root and cannot be changed**. Following a password change, the browser displays an authentication window and asks for the new password. **After changing the password, you cannot restore the original administrator password. Your only option is to reset all default factory settings/parameters.**

To enter the password:

Open the Internet Explorer and enter the IP address of the camera
(e.g.: <http://192.168.0.99>).

You are prompted for authentication:

➔ You are now connected with the Network camera and can see a video stream.

⚠ Note: It may happen that your PC's security settings prevent a video stream. You can change the security settings to a lower level under "Tools/Internet Options/Security". Make sure you enable Active X Control Elements and Downloads.

Changing the administrator password

Click **"Configuration"** and then **"Security"**.

Under **"Root password"**, enter the administrator password and confirm it under **"Confirm password"**.

Click **"Save"**.
The new administrator password is saved.

Click **"HOME"** in the column on the left to exit configuration.

Installing the plug-in

When you first access the Network camera under Windows, the web browser may ask for the installation of a new plug-in for the Network camera. This query depends on the Internet security settings of your PC. If the highest security level is set, the PC will refuse any installation and any attempt at execution. This plug-in is used for video display in the browser. To continue, click Yes. If the web browser prevents continuation of the installation, open the Internet security settings and reduce the security level or consult the IT administrator or network administrator.
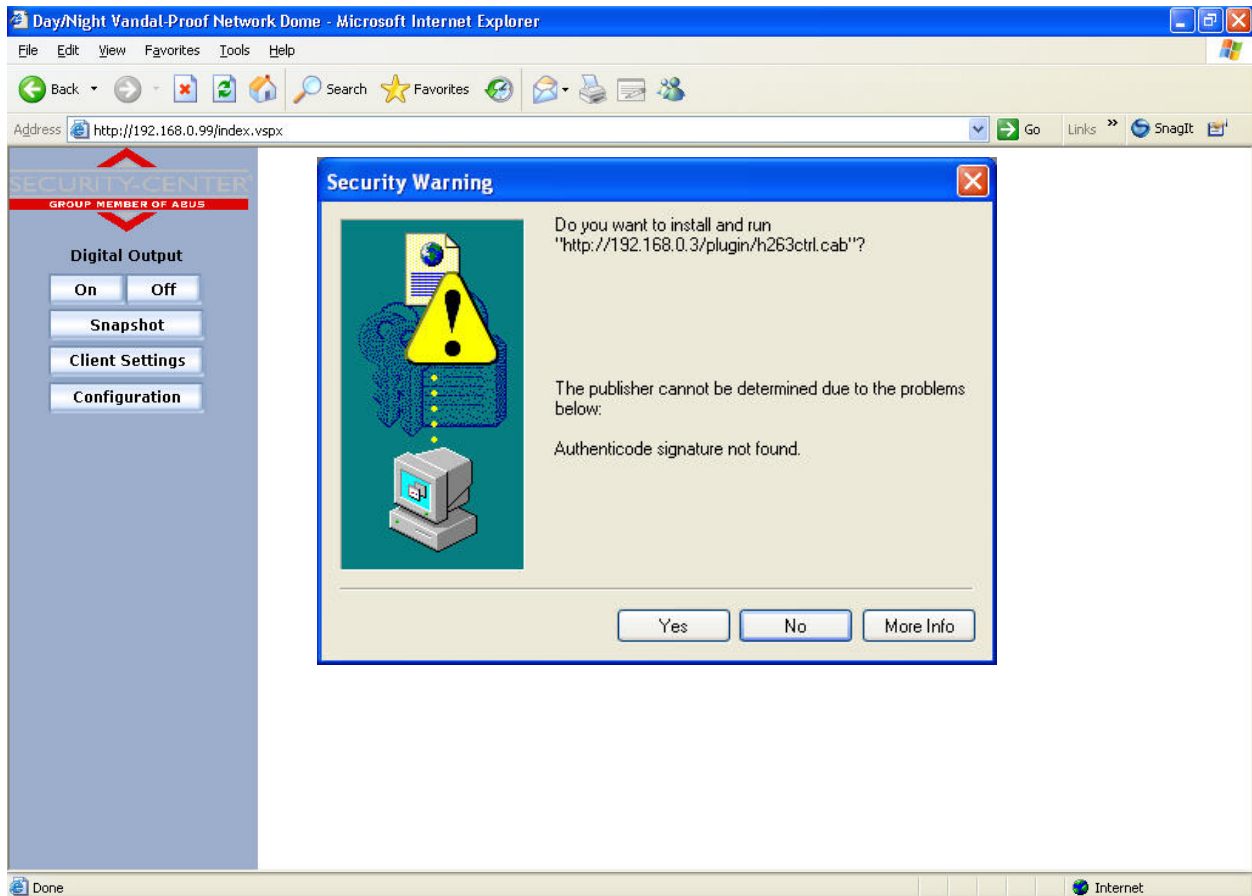
Basic user functions

Main window and camera view

The view of the main page consists of two parts:

Configuration: The camera can be configured via this user interface.
Camera view: Camera video stream

Click the configuration link on the left of the picture to open the configuration page.
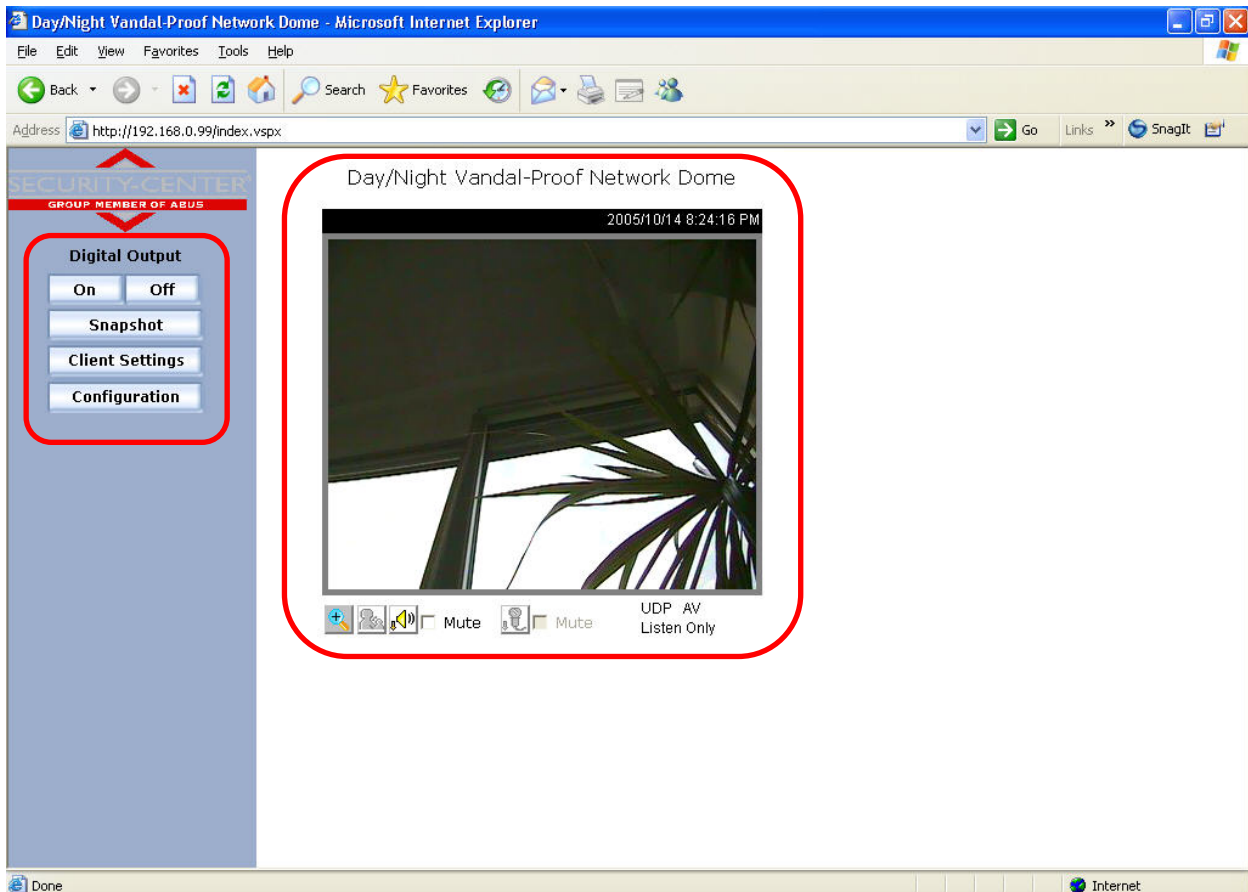
<u>Configuration</u>

Digital Output

Click ![ON] or ![OFF] to switch the relay output on/off.

Snapshot

Click ![Snapshot]. The web browser displays a new window containing the snapshot. To save the snapshot, either left-click it and then click the diskette icon or right-click it and select **Save** from the context menu.
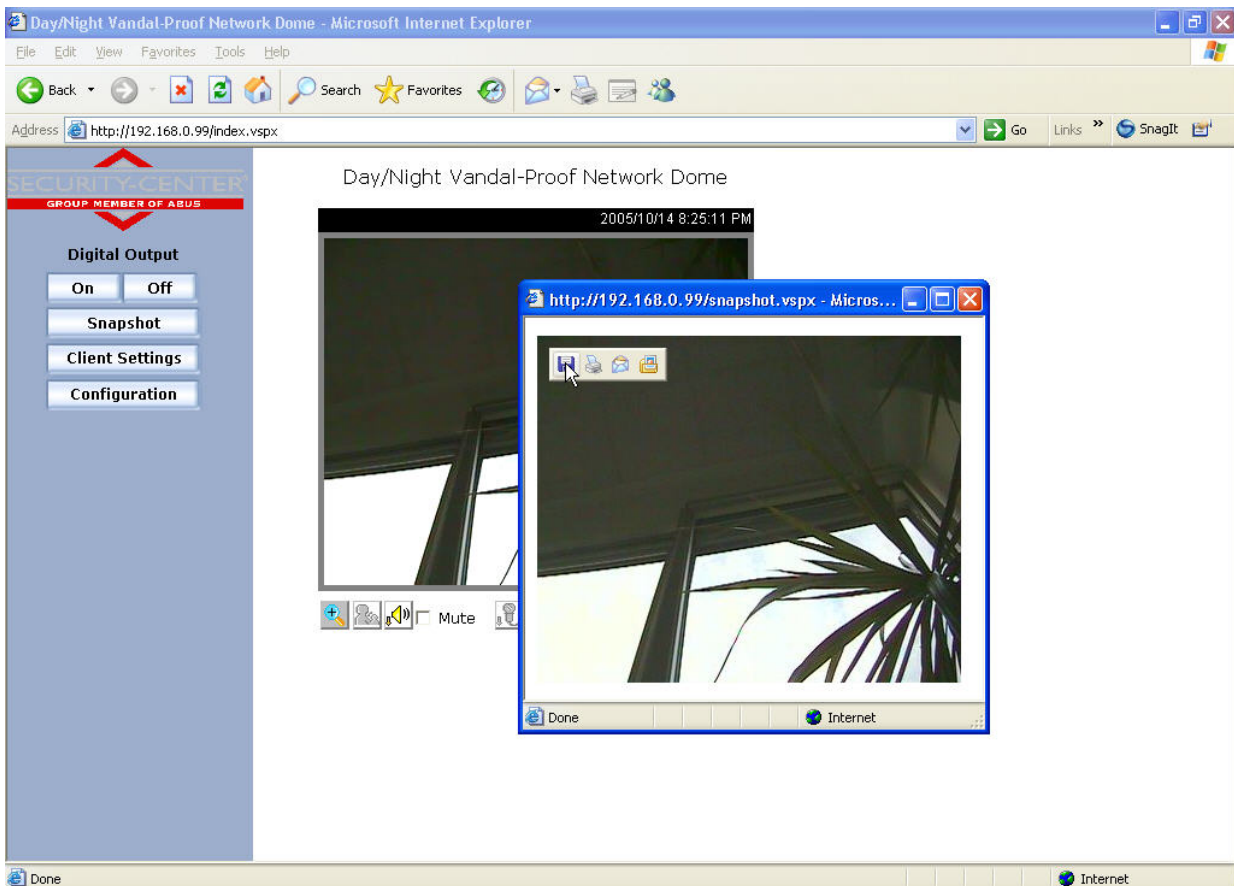
<u>Camera view</u>

The information bar at the top of the camera view shows the assigned caption and the current date/time. The information bar at the bottom of the camera view shows the current streaming mode and audio transmission mode. You can push/toggle the talk button to talk to the remote server. The volume of speaker and microphone can also be adjusted.

Zoom

Click the magnifying glass under camera view. The control field for digital zooming appears. Disable the **Disable Digital Zoom** box and change the zoom factor with the slider.

<u>Client settings</u>

When you first access the **Connection Type** page under Windows, the web browser asks for the installation of a new plug-in. This plug-in was registered at certification and can be used to change parameters on the **Client settings** page. To install the plug-in, click [Yes]. If the web browser prevents continuation of the installation, open the Internet security settings and reduce the security level or consult the IT administrator or network administrator.
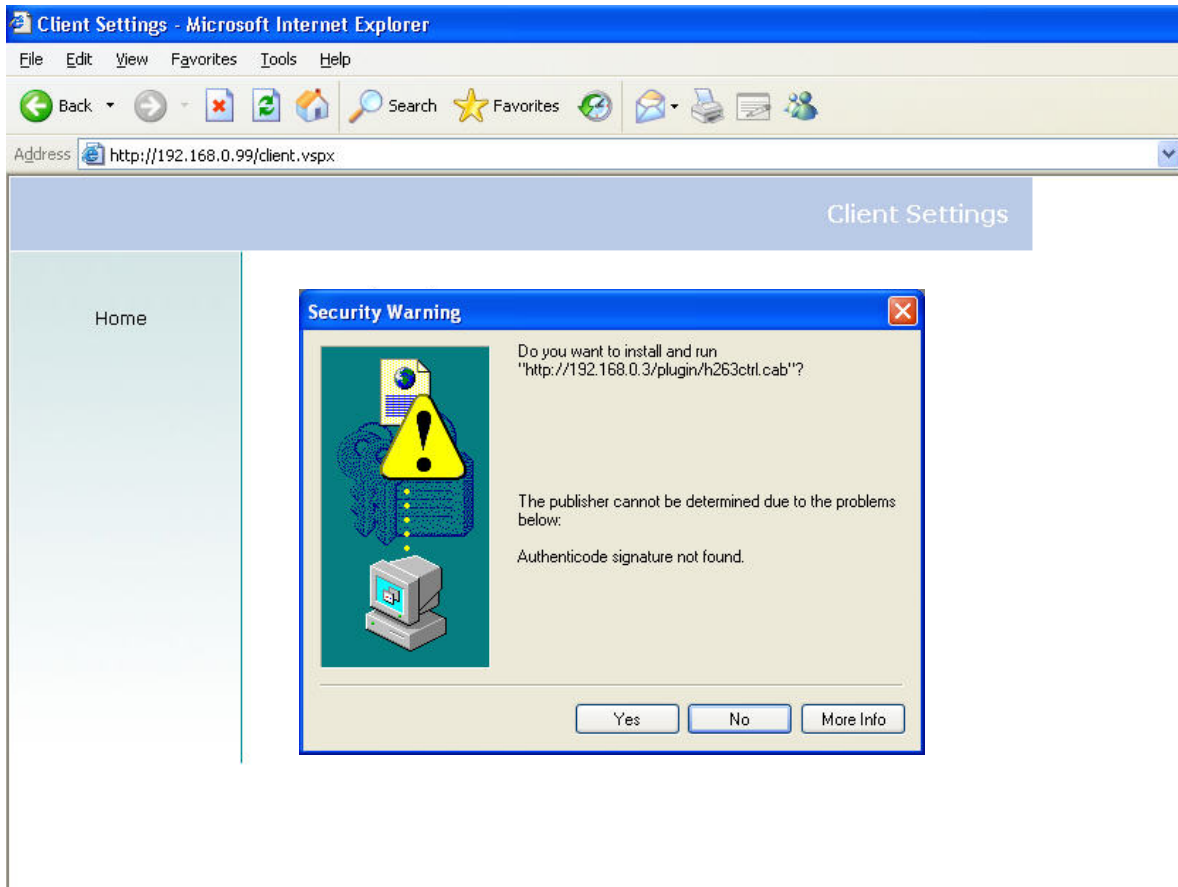
Two settings are available on the **Client settings** page. Under **"Media Options"**, you can disable the audio function. Under **"Protocol Options"**, you can select a transmission protocol for data transfer between the client and the server. Three protocol options are available for optimising the application: UDPand HTTP.

The UDP protocol gives you a larger number of realtime audio and video streams. However, some data packets can be lost due to the large data volume in the network. Pictures can be unclear. The UDP protocol is recommended if you have no special requirements.

Use the HTTP protocol if the network is protected by a firewall and only the HTTP port (80) is to be opened. In this mode, no audio is transmitted.

The selection of the client is normally recommended in the following order: UDP – HTTP. When the Network camera has been successfully connected, the **"Protocol Options"** box shows the selected protocol. The selected protocol is registered in your PC and used for the next connection. After changing the network environment or if you want to search again for the Network camera using the web browser, select the UDP protocol manually, save it and then return to **"HOME"** to set up the connection again.
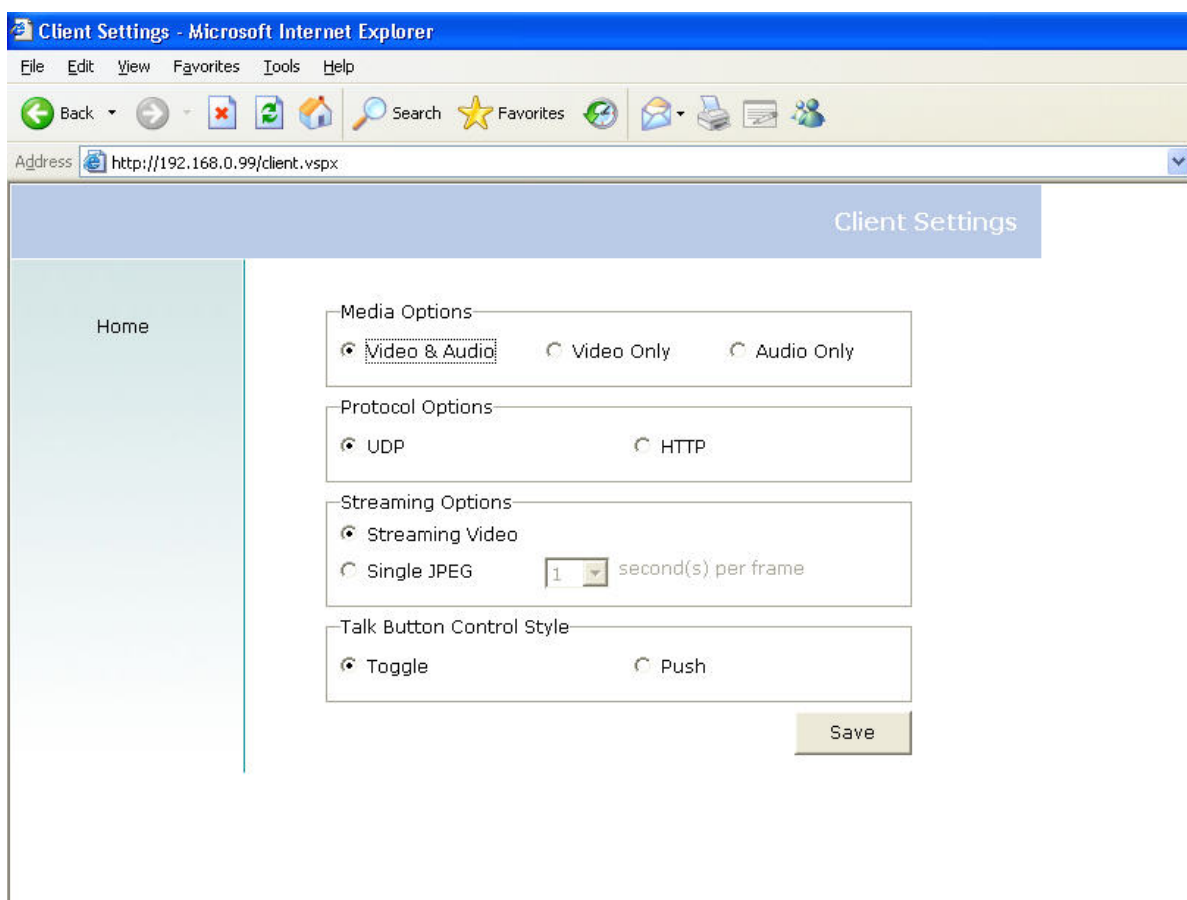
"Streaming Options" For users to select the video streaming types. Select **"Streaming Video"** option, the video connection will keep alive to enable you to see smooth video, while **"Single JPEG"** option will let you see the video in JPEG format by client periodic update the JPEG image from server according to the **"Frame rate"** settings.

"Talk Button Control Style" For the user to determine whether to "click once and talk" or "push to talk".

<url> http://<Network Camera>/protocol.html
Network Camera is the original IP address or the hostname of the Network camera.

Administrator settings

Configuration / video

Best performance is produced by the maximum frame rate with best video quality and minimum network bandwidth. The six factors **"Size"**, **"Maximum frame rate"**, **"Video codec type"**, **"Key frame interval"**, **"Fix bit rate"** and **"Fix quality"** on the video configuration page are correlative to allow for achieving the best performance that is possible.

For high frame rates

To obtain a good visual realtime effect (more than 20 frames/s), the network bandwidth must be sufficiently large. If the network bandwidth is higher than 1 Mbps, the value for the **"Fix bit rate"** must be set to 1000Kbps or 1200Kbps and the **"Fix quality"** to the highest quality. In the PAL system, the maximum frame rate is 25, and in the NTSC system, 30 frames per second. If your network bandwidth is more than 384Kbps, you can fix the bit rate according to your bandwidth and the maximum frame rate to 25 or 30 fps (frames per second). If the pictures in your environment are changed drastically, you can reduce the maximum frame rate to 20 frames per second to set the data transmission rate lower. This gives you a better video quality, and the human eye cannot distinguish between 20, 25 and 30 frames per second. If the network bandwidth is less than 384 Kbps, adjust the **"Fix bit rate"** according to the bandwidth and try to get the best performance by fine-tuning the **"Maximum frame rate"**. In a "slow" network, a high frame rate results in unclear, distorted images. Another way to improve quality is to select **"Half"** in the **"Size"** option, or **"Half x 2"** for a larger view of the pictures. Video quality also depends on the number of users in the network. Performance can also be affected by a bad connection and by a restriction of the network burst.

In multi-user environment, the user who has poor network performance will receive only the key frame in MPEG4 format. Try to reduce the key frame interval can improve the frame rate for poor network performance, but the penalty is the increasing of network traffic. If the server is running on the Internet, select **"Improve efficiency in the multi-user environment"** will improve the efficiency in the multi-user environment.

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For higher-quality pictures

For best video quality, set **"Fix quality"** to **"Detailled"** or **"Excellent"** and the **"Maximum frame rate"** so that it corresponds to the bandwidth of your network. If your network is slow and you get "broken" images, go to the HTTP protocol under **"Protocol Options"** and select a more suitable transmission mode. Pictures can also be affected by a time delay due to a slower connection. The more users in the network, the greater this time delay.

For high frame rates with high-quality pictures

If you have a broadband network, set **"Fix bit rate"** to **"512Kbps"** or higher and leave **"Fix bit rate"** unchanged. You can also set the bandwidth according to the actual network speed or the frame rate. Start with 25 frames per second and reduce this setting until you get the best performance. However, do not reduce it to less than 15 frames per second. If the picture quality is not improved, select a lower setting for **"Fix bit rate"**.

Select Motion-JPEG (MJPEG) for video codec type

The network camera is a camera with dual video codec, MPEG4 and MJEPG. If MJEPG is selected the camera will transmit video data in JPEG format. Therefore, it requires higher bandwidth to view smooth video. General speaking, each normal sized JPEG image would be 3k~12k bytes, depending on the selected video quality and contents. Together with the frame rate selected, the administrator can control the bandwidth of each connection.

Protecting the Network camera with a password
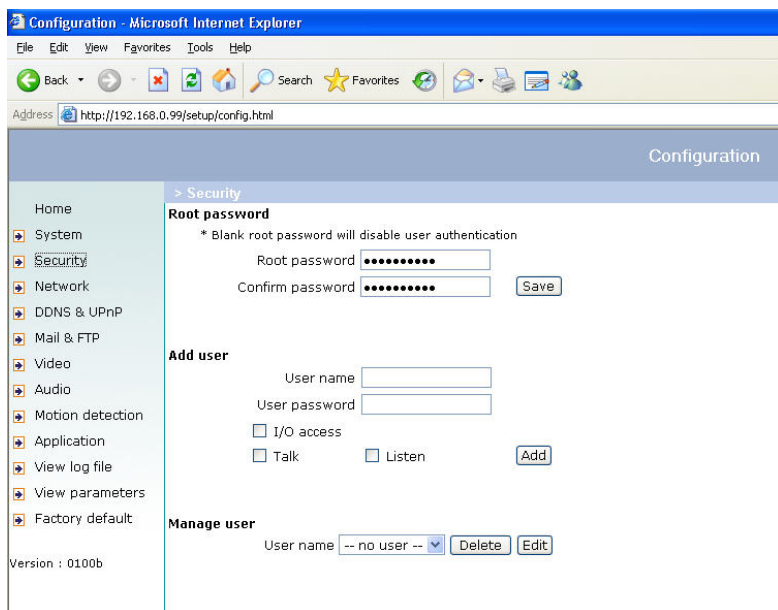
Root password

The DIGI-LAN Network camera is delivered without password. In this case all users have access to the Network camera, including its configuration, as long as they know the IP address. If other users are to have access to the Network camera, you should therefore assign a password to the camera. To activate protection, enter a new password. The administrator is identified with this password.

Opening accounts for new users

Under **"Configuration"**, select **"Security"**. Now go to the **Add user** section.

Add an account with user name and password for a second user. You can define up to twenty accounts for other users of the Network camera. The camera checks only the access permission of the corresponding user name and password. This means that two or more users can use the same account at different levels. An option for access to the relay **"I/O access"** is available for every account.

<u>More flexible options for the viewer</u>

Allow "demo" account to view:

If you want to have a guest account for viewers only, you just need to add a user without password and disable all privileges. Share the account to you friends.

Format of a multimedia website

Demo on two or more pages – medium-scale service

The Network camera allows up to ten online visitors simultaneously. Following installation, you focus the Network camera on a picture and inform the visitors of the web browser address. Caution: Keep your guest list on the security configuration page to prevent visits by unwanted visitors.

Product demo for e-Business – large-scale service

If the number of visitors exceeds the limit, the Network camera enables the pictures to be viewed as snapshots in JPEG mode. These pictures are displayed as stills and updated automatically. This requires a script function that is supported by the web browser.

1. On the homepage, click **"Client settings"**.
2. Select **"Single JPEG"** in **"Streaming Options"**,
3. Set the snapshot interval for automatic updating of the still picture. The greater the snapshot interval, the better the snapshot mode works for more viewers.

If you want to extend the function for a larger number of visitors, the host server must be capable of handling large traffic volumes in the network in order to be able to update the pictures from the Network camera.

If the website has an FTP service

Define the Network camera as an FTP client. Access to the Network camera depends on the number of visitors; the picture quality remains constant.

1. On the homepage, click **"Configuration"**.
2. In the left column, click **"Mail & FTP"**.
3. Enter the FTP-specific settings, including the server, user name, and password, plus the path for uploading, if required by the website.
4. Click Save ; the system is restarted.

5. In the left column, click **"Application"**.

6. To upload the pictures, select the weekday and the daily schedule.

7. Select **"Sequential operation"** and set the interval.

8. Unselect the FTP without the date/time suffix as transfer method and click [Save]

9. The image file uploaded to the web is named **video.jpg**. Make sure that the file is uploaded to the right folder.

10. Prepare a homepage with the integrated picture reference for the image file previously uploaded via FTP.

If no FTP service is available in the web

An automatically updated homepage can be used for occasional retrieval of the latest pictures from the Network camera. You get the best performance by using a free website provider, since the FTP service can be restricted.

```html
<html>
<head>
<title>Example – auto refresh page</title>
</head>

<body>
<p align=left>
<font size="7" face="Comic Sans MS" color="#FF0000">MiniAVServer
Demo</font>
</p>
<p align left>

<!—Begin of scripts to auto refresh the image. Change the IP address in the
image URL and refreshrate if necessary.-->

<script language=javascript>
   var RefreshRate=1;// Refresh Rate in Seconds
   var SourcePic="http://62.153.88.101/cgi-bin/video.jpg";
   var WidthPic=352;
   var HeightPic=288;
   function refresh(){
   document.images["Picture"].src=SourcePic+"?"+new Date();
   setTimeout('refresh()', RefreshRate*1000);}
   document.write('<img src="'+SourcePic+'" height="'+HeightPic+'"
width="'+WidthPic+'" name="Picture">');
   if(document.images) window.onload=refresh;
</script>
<!—-End of scripts to auto refresh the image.-->
</p>
</body>
</html>
```

Alarm inputs/outputs

Configuration / application

The administrator can combine options on the application page to permit the running of a large number of security applications. Two inputs, e.g., for motion detection, are available. There are also two outputs that react to such events, including uploading of snapshots via the Internet and switching other connected actors. You can use either FTP or e-mail to upload snapshots. Both e-mail and FTP use the network settings on the homepage. For specifications of a detailed configuration, see the "System configuration" section.

Time-controlled surveillance

1. On the homepage, click **"Configuration"**.
2. In the left column, click **"Application"**.
3. Click the boxes next to the weekdays you require and define the time period under **"Snapshots begin at"** and **"Snapshots stop at"** for daily supervision of the trigger conditions.
4. Enable **"Event operation"**. The trigger condition can be set to detect series of motions or the status of the connected device.
5. The delay before detecting the next event is used to prevent continuous error display following the original event.
6. The delay for recording a snapshot after the event is used for recording the direction of moving objects.

<u>Integrated video sensor</u>

If no external sensor is available, the administrator can use the integrated motion sensor to monitor movement and send snapshots by e-mail for inspection.

1. In the left column, click **"Motion detection"**.
2. Enable **"Enable Motion detection"**.
3. Click [New] to keep a new window ready for supervising the video.
4. Enter a new name to identify the new window.
5. Click a corner of the window, keep the mouse button pressed, and adjust the size of the window for motion detection or move the window.
6. You can fine-tune the camera with **"Sensitivity"** and **"Percentage"**. The higher the **"Sensitivity"**, the smaller the changes that can be detected in the picture sequence. The lower the **"Percentage"**, the smaller the objects that can be differentiated in a picture.
7. Click [Save] to activate the bar graph (activity). Green means that the motion sequence is lower than the level set by the administrator, and red means that the motion sensor has been triggered.

8. In the left column, click **"Application"**.
9. Under **Event operation/Trigger condition/Detect motion in**, select the window name.
10. Enable **"Upload snapshots while motion detected"** to transfer the snapshots by e-mail.
11. Enable **"Send snapshots by email"**.
12. Click [Save] to activate the settings (activity).

You can download the latest software from the website. A user-friendly update wizard (installation wizard) is provided for updating the Network camera software. Only the administrator can start the update function. To update the system:

1. Download the firmware file with the name TV721X_english.pkg from the corresponding products folder.

2. Start the update wizard and follow the instructions. For details, see the instructions of the update wizard.

3. The complete procedure finishes in a few minutes, and the system is automatically rebooted.

⚠ **If there is a power failure during the write process of the flash memory, the program in the memory of the security network camera may be irreparably damaged. If the security network camera cannot be correctly restarted following the update, consult your dealer's technical support.**

System configuration

Only the administrator has access to system configuration. The following sections explain each element in the left column. Specific tasks on the Options page are printed **bold**. The administrator can enter the URL under the picture to jump direct to the pictures page of the configuration. For setting specific options via the URL, see Appendix C.

"url" *http://"Network Camera"/setup/config.html*
"Network Camera" is the domain name or original IP address of the security network camera.
"url" *http://"Network Camera"/setup/system.vspx*
"Network Camera" is the domain name or original IP address of the security network camera.

System

„Host name" The text represents the title of the homepage.
„Turn off the LED indicator" Select this option to switch of the LED on the rear of the camera. This prevents other persons knowing that the camera is in use.
„Keep current date and time" Click this option to keep the current date and time of the security network camera. An internal realtime clock stores the date and time after the system is switched off.
„Sync with computer time" Synchronises the date and time of the security network camera with the local computer. The read-only date and time of the PC are displayed following updating.
„Manual" Sets the date and time according to the administrator's input. Note the date/time format when entering in the respective fields.
„Automatic" Synchronises the date and time with the NTP server via the Internet every time the security network camera is switched on. This is not possible if the respective time server cannot be reached.
„NTP server" Assigns the IP address or the domain name of the time server. If you leave this text box empty, the security network camera is connected to the default time servers.
„Time zone" Sets the time according to the time server for local settings.
"Update interval" Select hourly, daily, weekly or monthly update with the time on the NTP server.

Don't forget to click [Save] to make your settings take effect; otherwise, the time is not synchronised.

Security

„Root password" For changing the administrator password by entering a new password. For security reasons, the passwords entered are represented by asterisks. After [Save] is clicked, the web browser prompts the administrator to enter the new password for accessing the network camera.
„Add user" Enter the new user name and password and click [Add]. The new user is displayed on the list of user names. Up to twenty user accounts can be defined. You can assign "I/O access", "Talk" and "Listen" to every user.
„Delete user" Open the list of user names, select a user and click [Delete] to delete this user.
"I/O access" Allows user to control the DO (Relay output) and get status of the DI (Digital input).
"Talk" Allows user to talk to the server
"Listen" Allows user to listen from the server.
"Delete user" Pull down the user list to find the user's name and press "Delete" to complete.
"Edit user" Pull down the user list to find the user's name and press "Edit" to edit the user's password and privileges.
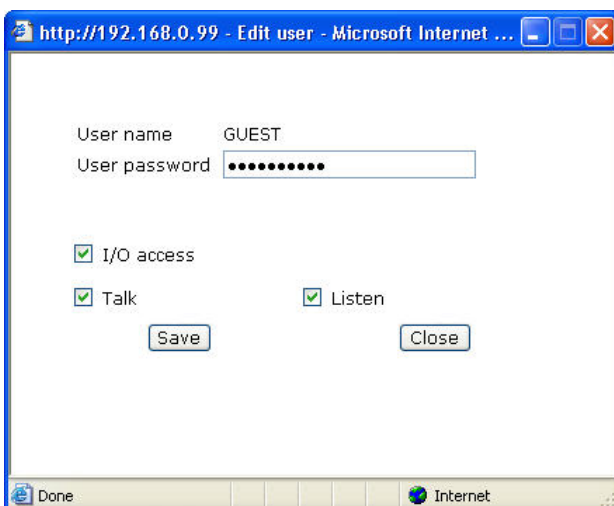
"url" *http://"Network Camera"/setup/edituser.vspx*
"Network Camera" is the domain name or original IP address of the security network camera.
"url" *http://"Network Camera"/setup/security.vspx*
"Network Camera" is the domain name or original IP address of the security network camera.

Network

All changes made on this page cause a system reboot so that they can take effect. Make sure that the fields are correctly filled before you click [Save].

„Get IP address automatically" This can be tedious having to perform software installation whenever the network camera starts. Therefore, once the network settings, especially the IP address, have been entered correctly, select **"Use fixed IP address"** then the network camera will skip installation at the next boot. The network camera can automatically restart and operate normally after a power outage. Users can run installation wizard to check the IP address assigned to the network camera.

General

„IP address" This is needed for network identification.
„Subnet mask" Defines whether the destination is in the same subnet. The default value is "255.255.255.0".
„Default router" Gateway for transmitting pictures to another subnet. An invalid router setting prevents transmission to these destinations in different subnets.
„Primary DNS" Server of the primary domain name with which the hostnames are converted into IP addresses.
„Secondary DNS" Server of the secondary domain name for generating a reserve copy of the primary DNS.

HTTP

„HTTP port" This port can be different from the standard port 80. If this port is changed, users must be informed to ensure a successful connection. Example: If the administrator changes the HTTP port of the security network camera with the IP address 192.168.0.99 from 80 to 8080, users have to enter "http://192.168.0.99:8080" in the web browser instead of "http://192.168.0.99".

Data flow

„UDP audio channel port" This port can be different from the standard port 5002 if this is blocked by a firewall.
„UDP video channel port" This port can be different from the standard port 5003 if this is blocked by a firewall.

"url" *http://"Network Camera"/setup/network.vspx*
"Network Camera" is the domain name or original IP address of the security network camera.

WLAN configuration

"SSID" (Service Set Identifier) The name that identifies the wireless network. The access point and the WLAN network camera must use the name SSID. The factory setting is "default". IMPORTANT: The max. length is 32 characters; do not use: " , ", <, > and spaces.

"Wireless mode" Select one of the following:

> **"Infrastructure"** The network camera is connected to the network via an access point.

> **"Ad-Hoc"** In this mode, the network camera can communicate direct with another network adapter (network card). A so-called Peer-to-Peer environment is set up.

"Channel" In infrastructure mode, the channel used is selected automatically by the camera. In Ad-Hoc mode, the channel must be set manually according to the other network adapter.

"TX rate" Set the maximum transmission speed in the network. In the factory, the speed is set to select automatically ("auto"), and the camera always tries to reach the highest transmission speed according to the environment.

"Preamble" A so-called preamble is set before each data packet. This preamble is used to synchronise the receiver and the sender. With a "short preamble", the synchronisation length is shorter and therefore not so secure.

"Security" Select the encryption method:
> **"None"** No encryption selected.
> **"WEP"** (Wired Equivalent Privacy) A 64- or 128-bit key is used for encryption (HEX or ASCII). For communication with other equipment, these keys must be the same on both devices.
> **"WPA-PSK"** (Wi-fi Protected Access – Pre Shared Keys) With this method, dynamic keys are used. As encryption protocols, TKIP (Temporal Key Integrity Protocol) or AES (Advanced Encryption Standard) can be selected. A so-called Pre-Shared Key must be defined.

"Auth mode" Authentication mode: Select one of the following methods:
> **"Shared"** This mode permits communication only with equipment using the same WEP key.
> **"Open"** The key is communicated over the whole network.

"Key length" Select 64 or 128 bit.
"Key format" Key format
> **"HEX"** Hexadecimal format
> **"ASCII"** ASCII format

"Network key" For different key formats, different key lengths are expected.
> 64 Bit: 10 hex digits or 5 characters
> 128 Bit: 26 hex digits or 13 characters
> 256 Bit: 58 hex digits or 29 characters
> IMPORTANT: If you want to use characters 22 ("), 3C (<) or 3E (>), you cannot use ASCII format.

"Pre-Shared-Key" Enter this key in ASCII format with a length of 8 ~ 63 characters.

⚠ Incorrect settings may prevent access to the camera. If the system can no longer be addressed, read the notes on restoring the factory settings in the appendix.

Configuration

> Wireless

WLAN Configuration

SSID	default
Wireless mode	Infrastructure
Channel	6
TX rate	Auto
Preamble	Long preamble
Security	None
Auth mode	Shared
Key length	64 bits
Key format	HEX

Default key   Network key

○ 1   0000000000
○ 2   0000000000
○ 3   0000000000
○ 4   0000000000

Home
System
Security
Network
Wireless
DDNS & UPnP
Mail & FTP
Video
Audio
Motion detection
Application
View log file
View parameters
Factory default

Version : 0100b

Save

<URL> http://<Network Camera>/setup/wireless.vspx
<Network Camera> is the domain name or original IP address of the network camera.

DDNS and UPnP settings

„Enable DDNS" Enables the DDNS function.

„Provider" The provider list contains four hosts that provide DDNS services. Connect to the service-provider's website to make sure that the service is available.
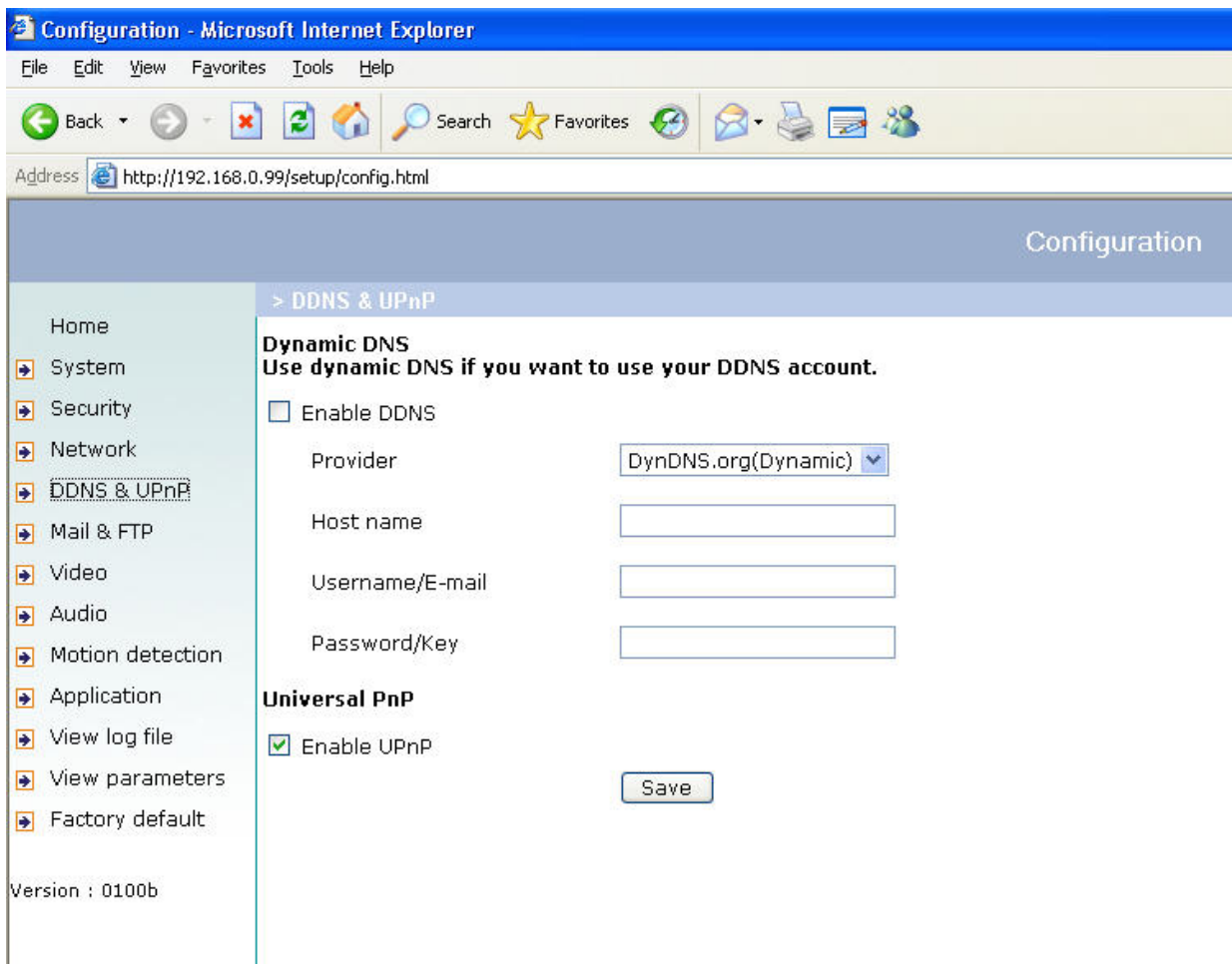
„Host name" This field must be completed if you want to use the DDNS service. Enter the hostname registered with the DDNS server.

„Username/Email" The user name and the e-mail address must be entered in this field to set up a connection to the DDNS server or to inform users about the new IP address. Important: If you enter a user name in this field, you must enter a password in the next field.

„Password/Key" To be able to use the DDNS service, enter the password or the key.

„Enable UPnP" Enables/disables the UPnP function. If UPnP is disabled, the camera cannot be found in the network environment under MS Windows XP. If the UPnP network component is installed under Windows XP, the hostname of the security network camera in the network environment is displayed with an IP address in brackets. Example: Security network camera (192.168.0.96). This means: The hostname of the security network camera is "Security network camera", and the IP address of the security network camera is 192.168.0.96.

Save Click this button to save the current settings for the DDNS service and the UPnP function.

"url" http://"Network Camera"/setup/ddnsupnp.vspx
"Network Camera" is the domain name or original IP address of the security network camera.

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Mail & FTP

<u>SMTP</u>

If the SMTP server supports SMTP authentication, the user has to enter a valid user name and password to send an e-mail via the server.

„**1st SMTP mail server**" Domain name or IP address of the external e-mail server.

„**1st SMTP account name**" Permitted user name for external e-mail server.

„**1st SMTP password**" Permitted password for external e-mail server.

„**1st recipient email address**" E-mail address of recipients of snapshots or of the log file. Two or more recipient names must be separated by semicolons (;).

„**2nd SMTP mail server**" Domain name or IP address of another e-mail server (backup) if the first server cannot be reached.

„**2nd SMTP account name**" Permitted user name for backup e-mail server.

„**2nd SMPT password**" Permitted password for backup e-mail server.

„**2nd recipient email address**" E-mail address of recipient for backup server.

„**Sender email address**" E-mail address of sender.

<u>FTP</u>

„**Built-in FTP server port**" This port can be different from the standard port 21. The user can set this parameter to 1 to 65535. If this parameter is changed, the server port of the connection must be changed accordingly by the external FTP client program.

„**1st FTP server**" Domain name or IP address of the external FTP server. The following user settings must be correctly configured for remote access.

"**1st FTP server port**" The port to access the external FTP server.

„**1st FTP server user name**" Permitted user name for external FTP server.

„**1st FTP server password**" Permitted password for external FTP server.

"**1st FTP remote folder**" Permitted folder for external FTP server. The character set must match that of the external FTP server. If the virtual path is not mapped, some FTP servers cannot accept a slash in front of the path name. For details, see the instructions for the external FTP server. The folder privilege must be open for uploading.

„**1st FTP passive mode**" The security network camera is in the network protected by a firewall. A data connection for FTP may not be permitted. If you select passive mode, the FTP can get round this restriction and permit snapshots, so that the upload can continue. If you select passive mode, the security network camera can automatically try active mode if the external FTP server does not support passive mode.

„**2nd FTP server**" Domain name or IP address of the external FTP server.

"**2nd FTP server port**" The port to access the external FTP server.

„**2nd FTP user name**" Permitted user name for backup FTP server.

„**2nd FTP password**" Permitted password for backup FTP server.

„**2nd FTP remote folder**" Permitted folder for backup FTP server.

„**2nd FTP passive mode**" Setting of passive mode for the backup FTP server.

	Configuration

> Mail & FTP

Home

→ System
→ Security
→ Network
→ Wireless
→ DDNS & UPnP
→ Mail & FTP
→ Video
→ Audio
→ Motion detection
→ Application
→ View log file
→ View parameters
→ Factory default

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SMTP

1st SMTP (mail) server	smtp.web.de
1st SMTP account name	john.john@web.de
1st SMTP password	••••••••••
1st recipient email address	user@gmx.de
2nd SMTP (mail) server	
2nd SMTP account name	
2nd SMTP password	
2nd recipient email address	
Sender email address	john.john@web.de

FTP

Built-in FTP server port	21
1st FTP server	ftpserver@dyndns.org
1st FTP server port	21
1st FTP user name	useratftpserver
1st FTP password	••••••••••••••
1st FTP remote folder	networkcamera
☐ 1st FTP passive mode	
2nd FTP server	
2nd FTP server port	21
2nd FTP user name	
2nd FTP password	
2nd FTP remote folder	
☐ 2nd FTP passive mode	

Save

"url" *http://"Network Camera"/setup/mailftp.vspx*
"Network Camera" is the domain name or original IP address of the security network camera.

⚠ Incorrect settings can result in malfunctioning. Change the configuration only if absolutely necessary and consult the network administrator for the correct settings. Resetting and restoring the original configuration is described in Appendix A.

Video

„Text on video" The text appears in the black bar above the video window with a timestamp. This timestamp (date and time) is supplied by the security network camera, and the date and time are supplied by an integrated realtime clock.

„Color" Selects between colour and monochrome display.

„Size" Five options are available for the three video sizes. [Half] corresponds to a quarter of the size of [Normal]. [Half x 2] corresponds to the same video size as [Normal], but with reduced quality while requiring less bandwidth. [Normal] corresponds to a quarter of the size of [Double]. [Normal x 2] corresponds to the same video size as [Double], but with reduced quality while requiring less bandwidth.

"Video codec type" It can be either MJPEG or MPEG4. In MJPEG mode, the video frames are independent. In MPEG4 mode, there are I frames and P frames. To decode a P frame need information of the previous frame. MPEG4 consumes much less network bandwidth than MJPEG.

Five parameters are available for setting the video quality. [Maximum frame rate] Restricts the maximum frame rate, which can be combined with [Video quality control :] to optimise bandwidth use and video quality. If the user wants to define bandwidth usage independently of the video quality, [⊙ Fixed bit rate] and the desired bandwidth must be selected. MPEG4 video are composed by I frames and P frames as the following sequence: IPPPPIPPPPPIPPPP. **"Key frame interval"** determines how many related P frames will appear after one I frame. Large "Key frame interval" can reduce the bit rate, but cause image corrupt longer if there is packet loss while transmission. "Fix bit rate" option and "Key frame interval" option are only available in MPEG4 mode. Video quality can be affected due to sending the maximum frame rate within the restricted bandwidth if the pictures are fast-moving. To ensure video quality (quantising rate) independent of the network, a greater bandwidth is used to be able to handle maximum frame rate during the transmission of rapidly changing pictures.

[☐ Flip] Rotates the video vertically.

[☐ Mirror] Rotates the video horizontally. Select these options if the security network camera is installed upside down or back to front.

"Improve efficiency in the multi-user environment" Check this option to improve efficiency in the multi-user environment when running in the low bandwidth environment. But it will cause each connection slow a few minutes when connection established.

"Time stamp on video" When selected the time stamp format is:
   a) "Size" becomes Normal or Double, "Text on video" hh:mm:ss yy/mm/dd"
   b) "Size" becomes half, "hh:mm:ss yyyy/mm/dd"

"url" *http://"Network Camera"/setup/video.vspx*
"Network Camera" is the domain name or original IP address of the security network camera.

Picture settings
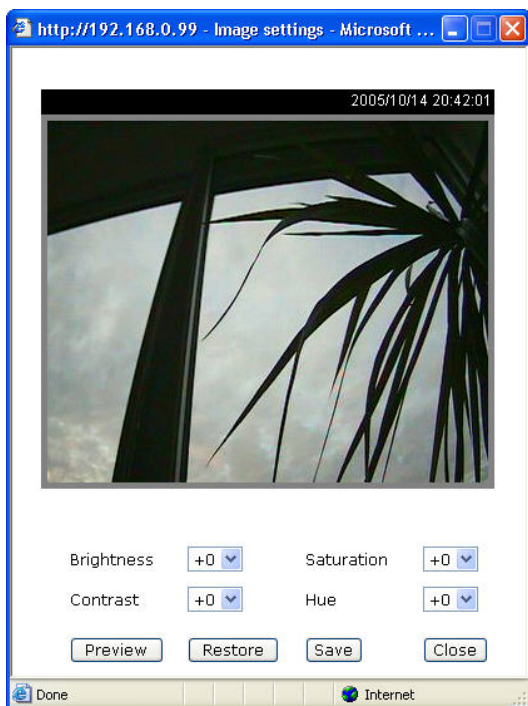
Click [Image settings] to open another window in which you can set the Brightness, Contrast, Saturation and the Hue of the video picture. Each field has levels from –5 to +5. To check your settings, click [Preview]. To save the picture parameters, click [Save]. To discard your changes, click [Restore].

Camera settings
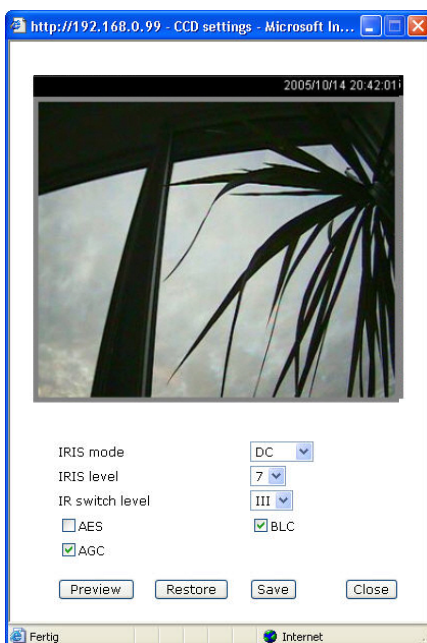
Click on **"Camera settings"** button, the Camera settings window will pop up.

"Iris mode" selection allows you to select between DC drive of Video drive to fit you auto iris lens.

"Iris level" let users to adjust the aperture size of you auto iris lens.

"AES" auto electronic shutter, enable this will let CCD sensor adjust electronic shutter automatically. Disable this when auto iris lens is attached.

"BLC" back light compensation – enable this will help to identify.

"AGC" automatic gain control, enable this to do MAX AGC, otherwise normal AGC is on.

In the Camera Settings window, click **"Preview"** to see the effect of changing the options. Click on **"Save"** to set the Camera settings. Click **"Restore"** to recall the original settings without incorporating the changes.

Day/Night function (only TV7216 and TV7217)

The Network cameras TV7216 and TV7217 additionally offers an IR cut filter which filters the IR light in day mode. In night mode this filter will be automatically removed, controlled by the camera module. The switching point can be setup, there are 3 steps: I (10 Lux), II and III (Lux).

Audio

"Transmission mode" There are five options to select. For all the modes, only one client can talk to the server at the same time.

"Full-duplex (Talk and listen simultaneously)" In this mode, the user can talk to the server while listening sound from the server simultaneously.

"Half-duplex (Talk or listen, not at the same time)" In this mode, the user can talk to the server or listen from the server, but not at the same time.

"Simplex – Talk only" In this mode, the user can only talk to the server.

"Simplex – Listen only" In this mode, the user can only listen from the server.

"Disable" In this mode, the audio is disabled in both directions.

"Send audio from the active client to all other clients" In half duplex transmission mode, select the option to talk to the server and broadcast you voice to all the other clients.

"Improve audio quality in low bandwidth environment" If the network camera works in versatile or low network bandwidth environment, the user can check this option to improving audio quality by sacrificing some real-time synchronisation.

"Accoustic echo cancellation" In full-duplex mode, the server can play sound from the client and receive sound from the environment and send it to the client. Since the sound from the client is played by the server, it will also be received by the server's microphone and send back to the client. That is the client will hear its echo. Select this option can prevent echo by sacrificing the video frame rate.

"Bit rate" There are three kinds or bit-rate for audio. 32kbps and 24kbps are suitable for music and speech. 8kbps is suitable for speech only.
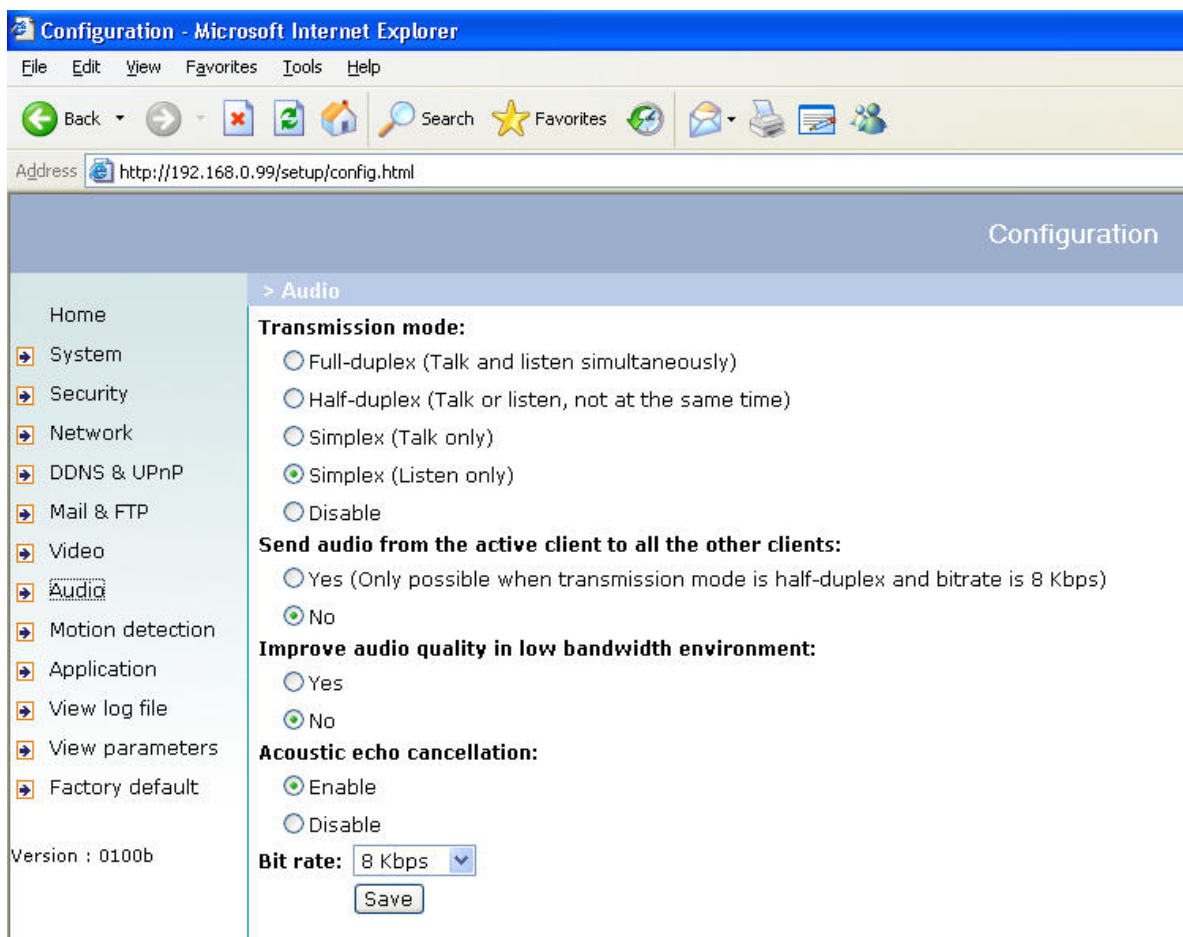
"url" *http://"Network Camera"/setup/audio.vspx*
"Network Camera" is the domain name or original IP address of the security network camera.

Motion sensor

„**Enable motion detection**" Check this option to turn on motion detection.

New Adds a new window. A maximum of three windows can be open simultaneously. To resize the window or move the title bar, click the window frame, keep the mouse button pressed and drag the window to the required size. Close the window by clicking the "x" in the top right corner.

Save Click this button to save window settings. A bar graph rises or falls according to the picture variation. A green bar means that the picture variation is below the surveillance level, while a red bar means that the picture variation is above the surveillance level. If the bar is red, the detected window appears with a red frame. When you return to the homepage, the monitored window is hidden. As soon as motion is detected, the red frame is displayed.

„**Window Name**" The text appears at the top of the window.

„**Sensivity**" Sensitivity in changes of picture sequence (e.g.: sensitivity high: triggering by slight picture change).

„**Percentage**" Detectable object size (low: small objects are detected; high: only large objects are detected)

This figure shows the screen after you click Save .
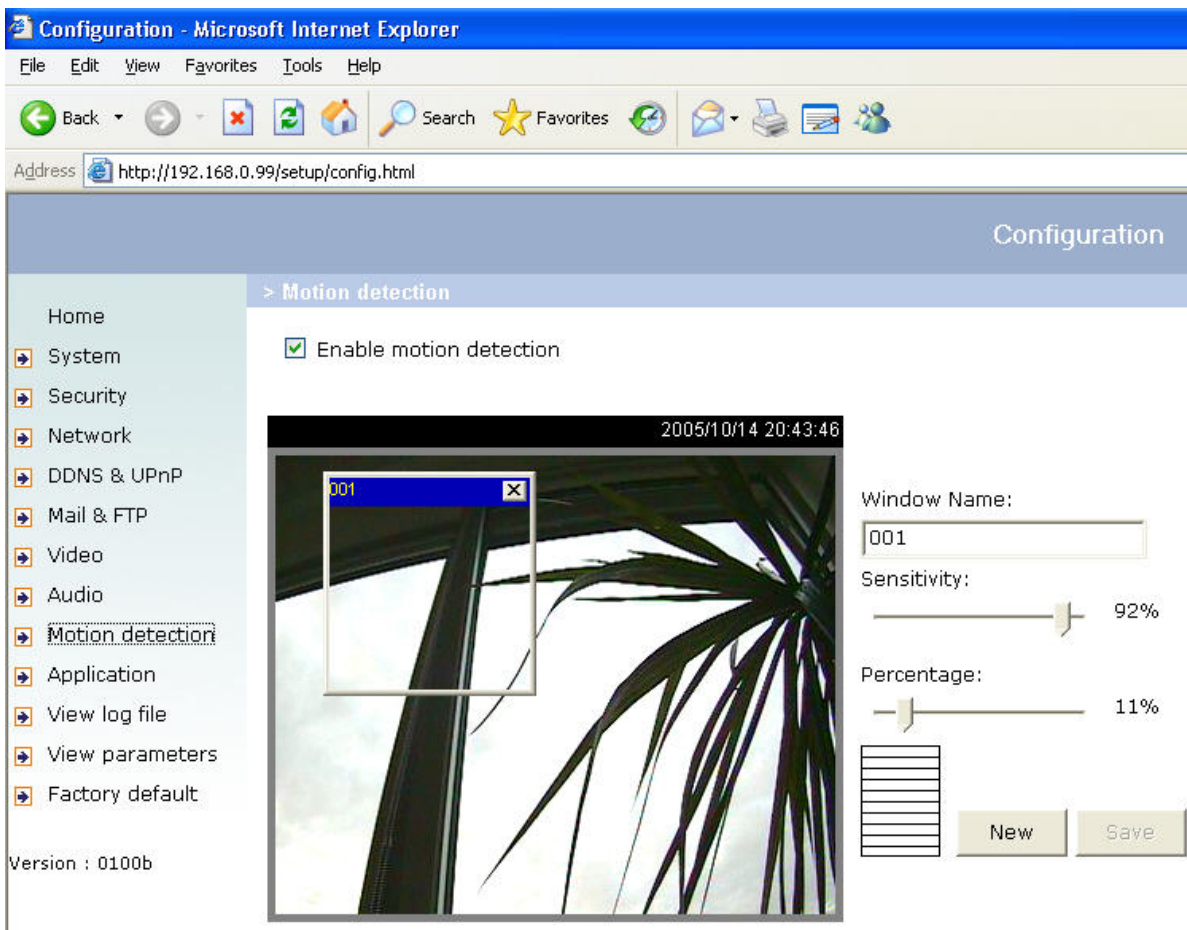
"url" *http://"Network Camera"/setup/motion.vspx*
"Network Camera" is the domain name or original IP address of the security network camera.

Application

<u>Weekly schedule</u>

„**Sun**" ~ „**Sat**" Selects weekdays for the following operations.
„**Snapshots begin at**" Sets the time for start of operation.
„**Snapshots stop at**" Sets the time for end of operation.
Start time and stop time settings should be entered in 24-hour format.
„**All the time except for the above schedule**" Sets the weekly schedule for all the time except for the times entered above.
"**Snapshot file name prefix**" Specify the prefix name for the snapshot file. Please check naming rule of snapshot file for more detail.

<u>Event reaction</u>

„**Delay xx second(s) before detecting the next event**" Sets a time delay before restarting, to check the trigger condition when the current condition is started.
„**Send xx pre-event image(s) when event occures**" Specify how many pre-event snapshots will be sent if events happen.
„**Trigger condition**" Four conditions are available in connection with the digital input, and three windows for motion detection: You can select more than one condition. Select the condition of the suitable digital input that matches the properties of the external device. With "**Input is high**" and "**Input is low**", the level trigger is selected via the external voltage input. „**Input is rising**", „**Input is falling**" are for flank control.

Three windows are provided for motion detection; you can assign a name to each of them. If motion detection has not been set, the message "undefined" appears instead of the window title. In this case, click "**Motion detection**"; a message appears telling you to go to the motion detection configuration page.
„**Trigger action**" Four options for three action types are available. You can select more than one condition at a time. While you are selecting the triggering of an output alarm, both pins are connected by the digital output and the circuit of the external device is closed. The normal state is open. The commands for uploading snapshots can be given either by e-mail or via FTP. The names of the snapshots are "vpre.jpg", "vtrg.jpg" and "vpos.jpg". These stand for snapshots taken before, during and after the event. Optionally, the date and time suffix can be appended. Confirm the settings of the external e-mail or FTP server in the network configuration.
„**Reset output**" Select and save this option for resetting the digital output.

<u>Sequencing</u>

„**Snapshot interval**" The security network camera sends snapshots to the external server at specified intervals using the method selected below. Don't forget that this process still depends on the conditions set in the weekly schedule.
„**Send snapshots by email**" This selects the upload method according to the intervals set above. The snapshot with the name "video.jpg" is attached to the e-mail with the subject name "Periodic Snapshots".
„**Send snapshots by email**" The snapshots are transmitted to the external FTP server with the file name defined in the next option. This option can also be used to update pictures stored on the external web server.
„**FTP put snapshots with date and time suffix**" Adds the date and time to the snapshot so that you can more easily distinguish between the file names of snapshots either in sequential or event-controlled operation. Example: "video@20030102030405.jpg" means that the JPEG picture was taken on January 2, 2003 at 03:04:05 (i.e., just after 3:04 am). If you omit this suffix, the file is updated with the name "video.jpg" on the external FTP server according to the specified time interval.

Naming rule of snapshot file

Method	With date and time suffix	Sequential	Event
FTP	Yes	<Prefix>_20050107175903.jpg	<Prefix>_20050107180653_1_pre.jpg <Prefix>_20050107180654_2_pre.jpg <Prefix>_20050107180655_3_pre.jpg <Prefix>_20050107180659_4_trg.jpg <Prefix>_20050107180700_5_pos.jpg
	No	<Prefix>.jpg	<Prefix>_1_pre.jpg <Prefix>_2_pre.jpg <Prefix>_3_pre.jpg <Prefix>_4_trg.jpg <Prefix>_5_pos.jpg
Email	N.A.	<Prefix>.jpg Example: Periodic Snapshots From: http://192.168.1.53 <Prefix>.jpg: 2005/01/07 17:59:45 Note: Network Camera	<Prefix>_1_pre.jpg <Prefix>_2_pre.jpg <Prefix>_3_pre.jpg <Prefix>_4_trg.jpg <Prefix>_5_pos.jpg Example: Event snapshots: Motion detection From: http://192.168.1.53 <Prefix>_1_pre.jpg 2005/01/07 18:09:16 <Prefix>_2_pre.jpg 2005/01/07 18:09:16 <Prefix>_3_pre.jpg 2005/01/07 18:09:16 <Prefix>_4_trg.jpg 2005/01/07 18:09:16 <Prefix>_5_pos.jpg 2005/01/07 18:09:16

Viewing System log

Click on the link on the configuration page to view the system log file. The content of the file provides useful information about configuration and connections after system boot-up.

Viewing System Parameters

Click on this link on the configuration page to view the entire system's parameter set. The content is the same as those in CONFIG.INI.

Factory default

Click on the link on the configuration page to restore factory default settings. Any changes made so far will be lost and the system will be reset to the initial factory settings. After clicking on the "Restore" button and make confirmation, the system will restart and require the installer program to set up the network again.

Appendix

A. Troubleshooting

LED status display

Following switch-on, the security network camera runs a diagnostic self-test to detect potential hardware faults. The following table lists the general LED patterns. In the event of a serious fault or error, the LED flashes differently from the patterns listed below.

Condition	LED colour
During the self-test following switch-on:	Blinking in interchanged Blue and Red
No Ethernet signal found:	Red LED is constantly ON and Blue LED is OFF.
Before the network is set up:	Red LED is constantly ON and Blue LED is OFF
After the network is set up:	Red LED is constantly ON and Blue LED is blinking every 0.5 seconds
Other hardware faults:	Other patterns

Resetting and restoring

Reset-Button

VIDEO OUT
MIC
RESET
12VDC
AUDIO OUT
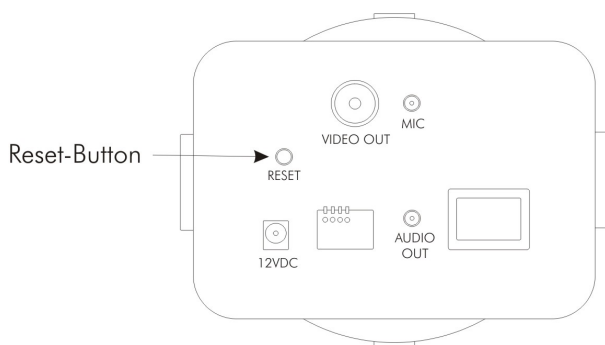
⚠ If the factory parameter settings are restored, all the previous settings are deleted. The system can be reset or restored.

In the opening next to the I/O terminal block is a button. Press this button to reset the system or restore the factory parameter settings. Sometimes the normal system status can be restored by a reset. If you have further problems following a reset, restore the factory parameter settings and reinstall and reconfigure the system.

RESET:
Press the reset button with a pointed object.

RESTORE:
1. Press the button continuously with a pointed object.
2. Wait until the self-test runs a second time.
3. Release the reset button after both LEDs shut off.

B. Frequently asked questions (FAQ)

F. What do I do if I forget my password?
A. Every access to the security network camera requires an authentication. If you are one of the managing users, ask your administrator for your password. If you are the administrator, there is no way of reactivating the root password. The only way of accessing the security network camera is to press the reset button on the rear of the camera to restore the factory-set parameters and then reconfigure the system.

F. Why does no video appear from the security network camera following authentication?
A. This problem can be caused by various factors:
1. If you have just installed the security network camera and see no video, check the video modulation on the configuration page.
2. Reduce the security level of the Internet Explorer to enable installation of the plug-ins.
3. If this problem recurs, the users are possibly working at a higher level than is permitted by the system.

F. What is the plug-in for?
A. The plug-in provided by the security network camera is used for showing video streams in the Internet Explorer. If your system does not permit the installation of plug-in software, reduce the security level of the web browser. Consult your network administrator.

F. Why is there a difference between the timestamp and the system time of the PC/notebook?
A. The timestamp is based on the system time of the security network camera. This is supplied by an internal realtime clock and can automatically be synchronised with a time server if the security network camera is connected to the Internet and the function is enabled. Differences of an hour or more are caused by the time zone setting.

F. Why is the picture not refreshed regularly?
A. If you use a modem, the bandwidth of the PPP connection is much less that with an Ethernet connection. If the timestamp difference is unstable, reduce the UART FIFO for reception and transmission under **Modem Properties** in the Control Panel. If you use the Ethernet, the reason may be the length of time required to store snapshots in memory after an event occurs.

F. How many users can watch the video simultaneously?
A. The number of users is basically unlimited. However, the video quality depends on the network bandwidth.

F. How fast is the video rate of the security network cameras?
A. The MPEG4 Codec can internally process 25 frames a second. However, the overall quality depends on various coefficients.
1. Data throughput in the network
2. Shared bandwidth
3. Number of users
4. The visible "complicated" objects result in large image files.
5. The settings on your PC that are responsible for displaying pictures.
The transmission rate of a normal local network can reach over 200 kilobytes per second and approximately 10 to 20 frames per second.

F. How can I keep access to video streams of the security network camera as secure as possible?
A. The security network camera was developed for surveillance purposes and has many flexible interfaces. User authentication and special confirmation during installation can prevent unauthorised access to the security network camera. You can also change the HTTP port to a non-public number. Check the system log for abnormal activities and their causes.

F. How fast can the security network camera check the state of the digital inputs?
A. The security network camera checks the input state in less than half a second. However, to avoid the conditions of a repeated check and ensure a correct functioning of equipment connected to the digital outputs, the security network camera delays for 3 seconds after each adaptation of the condition. You can modify this according to your own specific applications. During this period, other conditions are ignored.

F. Why is access to the security network camera not possible while I am setting options in the application?
A. If the security network cameras are started by events, snapshots need more time since they are written to memory. If the events occur too often, the system is constantly trying to store the pictures. If an event occurs very frequently, use sequential mode or an external recording program to record the pictures. If you want to access the pictures via FTP, the parameter can be set lower since FTP responds faster than the web. If the system is busy with configuration, press the reset button to restore the factory settings and store the system.

C. URL commands of the security network camera

For some customers who already have their own web site or web control application, Network Camera can be easily integrated through convenient URLs. This section lists the commands in URL format corresponding to the basic functions of Network Camera.

Overview
This section specifies the external HTTP based application programming interface. The HTTP based camera interface provides the functionality to request a single image, to control camera functions (output relay etc.) and to get and set internal parameter values. The image and CGI-requests are handled by the built in Web server.
Style convention
In URL syntax and in descriptions of CGI parameters, a text in italic within angle brackets denotes a content that is to be replaced with either a value or a string. When replacing the text string also the angle brackets shall be replaced. An example of this is the description of the name for the server, denoted with <servername> in the URL syntax description below, that is replaced with the string myserver in the URL syntax example, also below.
URL syntax' are written with the "Syntax:" word written in bold face followed by a box with the referred syntax as seen below. The name of the server is written as <servername>. This is intended to be replaced with the name of the actual server. This can either be a name, e.g., "mywebcam" or "thecam.adomain.net" or the associated IP number for the server, e.g., 192.168.0.220.

Syntax:

```
http://<servername>/cgi-bin/video.jpg
```

Description of returned data is written with "Return:" in bold face followed by the returned data in a box. All data returned as HTTP formatted, i.e., starting with the string HTTP is line separated with a Carriage Return and Line Feed (CRLF) printed as \r\n.

Return:

```
HTTP/1.0 <HTTP code> <HTTP text>\r\n
```

URL syntax examples are written with "**Example:**" in bold face followed by a short description and a light grey box with the example.
Example: request a single snapshot image
http://mywebserver/cgi-bin/video.jpg

General CGI URL syntax and parameters

CGI parameters are written in lower-case and as one word without any underscores or other separators. When the CGI request includes internal camera parameters, the internal parameters must be written exactly as they are named in the camera or video server. The CGIs are organized in function related directories under the cgi-bin directory. The file extension of the CGI is required.
Syntax:

```
http://<servername>/cgi-bin/<subdir>[/<subdir>...]/<cgi>.<ext>
[?<parameter>=<value>[&<parameter>=<value>...]]
```

Example: Setting digital output #1 to high
http://mywebserver/cgi-bin/setparam.cgi?do1=h

Get server parameter values

Note: This request require administrator access
Method: GET/POST

Syntax:

```
http://<servername>/cgi-bin/admin/getparam.cgi?[<parameter>]
[&<parameter>…]
```

where the <parameter> should be <group>[_<name>] or <group>[.<name>] If you do not specify the any parameters, all the parameters on the server will be returned. If you specify only <group>, the parameters of related group will be returned.

When query parameter values, the current parameter value are returned.
Successful control requests returns paramter pairs as follows.
Return:

HTTP/1.0 200 OK\r\n Content-Type: text/html\r\n Context-Length: <length>\r\n \r\n <parameter pair>

where <parameter pair> is
=<value>\r\n
[<parameter pair>]

<length> is the actual length of content.

Example: request IP address and it's response

Request:
http://192.168.0.123/cgi-bin/admin/getparam.cgi?network_ipaddress

Response:
HTTP/1.0 200 OK\r\n
Content-Type: text/html\r\n
Context-Length: 33\r\n
\r\n
network.ipaddress=192.168.0.123\r\n

Set server parameter values

Note: This request require administrator access
Method: GET/POST

Syntax:

http://<servername>/cgi-bin/admin/setparam.cgi? [nosync=<value>&]<parameter>=<value> [&<parameter>=<value>…][&return=<return page>]

parameter	value	description
nosync	0, 1	Specifies that there should be no sync (write) of the corresponding configuration file on flash. If parameter is omitted, a sync write will occur. (note: this parameter must be put at begin of parameter list)
<group>_<name>.	value to assigned	Assign <value> to the parameter <group>_<name>..
return	<return page>	Redirect to the page <return page> after the parameter is assigned. The <return page> can be a full URL path or relative path according the the current path. If you omit this parameter, it will redirect to an empty page. (note: The return page can be a general HTML file(.htm, .html) or a Vivotek server script executable (.vspx) file. It can not be a CGI command. It can not have any extra parameters. This parameter must be put at end of parameter list)

Return:

HTTP/1.0 200 OK\r\n Content-Type: text/html\r\n Context-Length: <length>\r\n

```
\r\n
<parameter pair>
```

where <parameter pair> is

=<value>\r\n

[<parameter pair>]

Only the parameters that you set and readable will be returned.

Example: Set the IP address of server to 192.168.0.123

Request:
http://myserver/cgi-bin/admin/setparam.cgi?Network_IPAddress=192.168.0.123

Response:
HTTP/1.0 200 OK\r\n
Content-Type: text/html\r\n
Context-Length: 33\r\n
\r\n
network.ipaddress=192.168.0.123\r\n

Available parameters on the server

NOTE: The bold characters in table are the default value of each parameter.

Group: **System**

NAME	VALUE	DESCRIPTION
hostname (r/w)	<text string shorter than 40 characters>	host name of server **<<Wireless>Network Camera <with Pan/Tilt/<Zoom>>>**
ledoff (r/w)	**0**	Do not turn off the led indicator
	1	Turn off the led indicator
date (r/w)	**<yyyy/mm/dd>**	year, month and date separated by slash.
	<keep>	keep date unchanged
	<auto>	Using NTP to sync date/time automatically
time (r/w)	**<hh:mm:ss>**	hour, minute and second separated by colon.
	<keep>	keep date unchanged
	<auto>	Using NTP to sync date/time automatically
ntp (r/w)	<domain name or IP address>	NTP server **<skip to invoke default server>**
timezone (r/w)	-12 ~ 12	time zone, 8 means GMT +8:00 **<8>**
updateinterval (r/w)	0 ~ 2592000	0 to Disable automatic time adjustment, otherwise, it means the seconds between NTP automatic update interval. **<0>**
serialnumber (r)	<mac address>	12 characters mac address without hyphen connected
firmwareversion (r)	<text string shorter than 39 characters>	The version of firmware, including model, company, and version number
restore (w)	0	Restore the system parameters to default value.
	Positive integer	Restore the system parameters to default value and restart the server after <value> seconds.
reset (w)	0 ~ 65535	Restart the server after <value> seconds.
	-1	Not restart the server.
do<1~4> (w)	<state>	H – NC connected with COMMON
		L – NO connected with COMMON

di<1~4> (r)	<state>	H – NC connected with COMMON
		L – NO connected with COMMON
supportscriptversion (r)	<text string shorter than 10 characters>	The version of supported script/webpage
scriptversion (r)	<text string shorter than 10 characters >	The maximum version of currently installed script/webpage
language	<text string shorter than 16 characters>	The webpage language
webpageversion	<text string shorter than 39 characters>	The version of webpage
enableir(r/w)	0	Turn on the IR control
	1	Turn off the IR control
ptzenabled (r)	32-bit integer	Indicate the operations of camera supported

Group: **Security**

NAME	VALUE	DESCRIPTION
username_<1~20> (r/w)	<text string shorter than 16 characters>	change user name. *<blank>*
userpass_<0~20> (r/w)	<text string shorter than 14 characters>	change user's password. The UserPass_0 is root's password. *<blank>*
userattr_<1~20> (r/w)	[dido][|talk][|listen] [|conf]	change user's privilege. The privilege can be the combination of dido – Permit I/O access talk – Permit to talk to server listen – Permit to listen from server conf – Permit to change server's configuration *<blank>*
usercount (r)	1 ~ 21	The current account number on the server including root.**<1>**

Group: **Network**

NAME	VALUE	DESCRIPTION
resetip (r/w)(restart)	1	enable to get ipaddress, subnet, router, dns1, dns2 from DHCP server at next reboot
	0	Using preset ipaddress, subnet, router, dns1, dns2
ipaddress (r/w) (restart)	<IP address>	IP address of server **<192.168.0.99>**
subnet (r/w) (restart)	<IP address>	subnet mask **<255.255.255.0>**
router (r/w) (restart)	<IP address>	default gateway *<blank>*
dns1 (r/w) (restart)	<IP address>	primary DNS server *<blank>*
dns2 (r/w) (restart)	<IP address>	secondary DNS server *<blank>*
smtp1 (r/w)	<domain name or IP address, string shorter than 40 characters>	primary SMTP server *<blank>*
mailto1 (r/w)	<string shorter than 80 characters>	mail recipient address *<blank>*
mailuser1 (r/w)	<text string shorter than 63 characters>	User name of primary smtp server *<blank>*
mailpass1 (r/w)	<text string shorter than 15 characters>	Password of primary smtp server *<blank>*

smtp2 (r/w)	\<domain name or IP address, string shorter than 40 characters\>	secondary SMTP server *\<blank\>*
mailto2 (r/w)	\<text string shorter than 80 characters\>	mail recipient address *\<blank\>*
mailuser2 (r/w)	\<text string shorter than 63 characters\>	User name of secondary smtp server *\<blank\>*
mailpass2 (r/w)	\<text string shorter than 15 characters\>	Password of secondary smtp server *\<blank\>*
returnemail (r/w)	\<text string shorter than 80 characters\>	return email address *\<blank\>*
localftpport (r/w)	\<positive number less than 65535\>	FTP port \<21\>
ftp1 (r/w)	\<domain name or IP address, string shorter than 40 characters \>	primary FTP server *\<blank\>*
ftpport1 (r/w)	\<positive number less than 65535\>	primary FTP port \<21\>
ftpuser1 (r/w)	\<text string shorter than 63 characters\>	user name for primary FTP server *\<blank\>*
ftppass1 (r/w)	\<text string shorter than 15 characters\>	password for primary FTP server *\<blank\>*
ftpfolder1 (r/w)	\<text string shorter than 40 characters\>	upload folder in primary FTP server *\<blank\>*
ftppasvmode1 (r/w)	1	Enable passive mode of primary FTP server
	0	Disable passive mode of primary FTP server
ftp2 (r/w)	\<domain name or IP address, string shorter than 40 characters \>	secondary FTP server
ftpport2 (r/w)	\<positive number less than 65535\>	secondary FTP port \<21\>
ftpuser2 (r/w)	\<text string shorter than 63 characters\>	user name for secondary FTP server *\<blank\>*
ftppass2 (r/w)	\<text string shorter than 15 characters\>	password for secondary FTP server *\<blank\>*
ftpfolder2 (r/w)	\<text string shorter than 40 characters\>	upload folder in secondary FTP server *\<blank\>*
ftppasvmode2 (r/w)	1	Enable passive mode of primary FTP server
	0	Disable passive mode of primary FTP server
httpport (r/w) (restart)	\<positive number less than 65535\>	HTTP port \<80\>
videoport (r/w) (restart)	\<positive number less than 65535\>	video Channel port for UDP \<5003\>
audioport (r/w) (restart)	\<positive number less than 65535\>	audio Channel port for UDP \<5002\>

Group: **Wireless (restart)**

ssid (r/w)	\<text string shorter than 32 characters\>	SSID for wireless lan settings \<default\>
wlmode (r/w)	0	Infrastructure mode
	1	Adhoc mode
channel (r/w)	1 ~ 11	Channel number of USA and Canada \<6\>
	1 ~ 13	Channel number of Euro \<6\>

	10 ~ 11	Channel number of Spain **\<10\>**
	10 ~ 13	Channel number of France **\<10\>**
	1 ~ 14	Channel number of All **\<6\>**
txrate (r/w)	"NONE", "1M", "2M", "5.5M", "11M", "6M", "9M", "12M", "18M", "24M", "36M", "48M", "54M", "Auto" for 802.11g	Transmit rate in Mbps **\<Auto\>**
preamble (r/w)	Long	Long preamble
	Short	Short preamble
encrypt (r/w)	1	Enable data encription
	0	Disable data encription
authmode (r/w)	Auto	Automatic mode
	Open	Open mode
	Shared	Shared mode
keylength (r/w)	(**64**, 128) for 802.11g	Key length in bits **\<64\>**
keyformat (r/w)	**HEX**	Key1 ~ Key4 will be represented in HEX format
	ASCII	Key1 ~ Key4 will be represented in ASCII format
keyselect (r/w)	1 ~ 4	Default key number **\<1\>**
key1 (r/w)	\<text string shorter than 58 characters\> (depends on keyformat & keylength)	WEP key1 for encryption **\<0000000000\>**
key2 (r/w)	\<text string shorter than 58 characters\> (depends on keyformat & keylength)	WEP key2 for encryption **\<0000000000\>**
key3 (r/w)	\<text string shorter than 58 characters\> (depends on keyformat & keylength)	WEP key3 for encryption **\<0000000000\>**
key4 (r/w)	\<text string shorter than 58 characters\> (depends on keyformat & keylength)	WEP key4 for encryption **\<0000000000\>**
domain (r)	'U' for USA 'C' for Canada 'E' for Euro 'S' for Spain 'F' for France 'I' for Isrel 'A' for All	Wireless domain

Group: **Video**

NAME	VALUE	DESCRIPTION
text (r/w)	\<text string shorter than 14 characters\>	enclosed caption ***\<blank\>***
codectype (r/w)	**0**	MPEG4
	1	MJPEG
keyinterval (r/w)	1, 3, 5, 10, 30, 60, 90, 120	Key frame interval **\<120\>**
size (r/w)	1	half
	2	half x 2

	3	normal
	4	normal x 2
	5	double
color (r/w)	0	monochrome
	1	color
quality (r/w)	0	fix bit rate
	1	fix quantization
quant (r/w)	1	lowest quality of video
	2	lower quality of video
	3	normal quality of video
	4	higher quality of video
	5	highest quality of video
bitrate (r/w)	64000	set bit rate to 64K bps
	128000	set bit rate to 128K bps
	256000	set bit rate to 256K bps
	384000	set bit rate to 384K bps
	512000	set bit rate to 512K bps
	768000	set bit rate to 768K bps
	1000000	set bit rate to 1000K bps
	1200000	set bit rate to 1200K bps
maxframe (r/w)	1	set maximum frame rate to 1 fps
	2	set maximum frame rate to 2 fps
	3	set maximum frame rate to 3 fps
	5	set maximum frame rate to 5 fps
	10	set maximum frame rate to 10 fps
	15	set maximum frame rate to 15 fps
	20	set maximum frame rate to 20 fps
	25	set maximum frame rate to 25 fps
	30 (for NTSC only)	set maximum frame rate to 30 fps
modulation (r/w)(in server version only) (restart)	0	NTSC
	1	PAL
	2	AUTO
actualmodulation (r) (in built-in CCD version only)	0	NTSC
	1	PAL
flip (r/w)	1	flip image
	0	normal image
mirror (r/w)	1	mirror image
	0	normal image
imprinttimestamp (r/w)	1	Overlay time stamp on video
	0	Do not overlay time stamp on video
udpslowstart	1	Enable udp slow start
	0	Disable udp slow start

Group: **Audio**

NAME	VALUE	DESCRIPTION
bitrate (r/w)	**8000**	set bitrate to 8K bps
	24000	set bitrate to 24K bps
	32000	set bitrate to 32K bps
transfermode (r/w)	**0**	Full-duplex (Talk & Listen simultaneously)
	1	Half-duplex (Talk or Listen, not at the same time)
	2	Simplex – Talk only
	3	Simplex – Listen only
	4	Disable audio
sendclientaudio (r/w)	**0**	Do not send audio from active client to all other clients
	1	Send audio from active client to all other clients (only possible in Half-duplex)
source (r/w)	0	Use external microphone in
	1	Use build microphone
lowbandwidth (r/w)	**0**	Disable low bandwidth environment support
	1	Improve in low bandwidth environment
enableaec (r/w)	**0**	Disable
	1	Enable

Group: **Image**

NAME	VALUE	DESCRIPTION
brightness (r/w)	<-5 ~ 5>	Adjust brightness of image according to mode settings. **<0>**
saturation (r/w)	<-5 ~ 5>	Adjust saturation of image according to mode settings. **<0>**
contrast (r/w)	<-5 ~ 5>	Adjust contrast of image according to mode settings. **<0>**
hue (r/w)	<-5 ~ 5>	Adjust hue of image according to mode settings. **<0>**
mode (w)	Preview	Apply the parameter of image but not save
	Restore	Restore the last saved image parameters
	Save	Directly save the adjust image parameters

Group: **CCD**

NAME	VALUE	DESCRIPTION
irismode (r/w)	Video	Video Iris
	DC	DC Iris
irislevel (r/w)	<1 ~ 8>	Iris level when connect to auto iris lens. 1 => most brightness, 8 => most darkness **<1>**
autoelectronicshutter (r/w)	0	Turn off AES
	1	Turn on AES
enableblc (r/w)	**0**	Turn off backlight compensation
	1	Turn on backlight compensation
enableagc (r/w)	**0**	Set auto gain control to normal level
	1	Set auto gain control to MAX level
flickless	**0**	Turn off flickless

(r/w)	1	Turn on flickless (1/100 NTSC, 1/120 PAL)
update (w)	1	Update the above settings
mode (w)	Preview	Apply the parameter of image but not save
	Restore	Restore the last saved image parameters
	Save	Directly save the adjust image parameters

Group: **Motion**

NAME	VALUE	DESCRIPTION
enabled (r/w)	0	disable motion detection
	1	enable motion detection
winenabled_<1~3> (r/w)	0	disable motion window #1
	1	enable motion window #1
winname_<1~3> (r/w)	<text string shorter than 14 characters >	name of motion window #1 *<blank>*
winleft_<1~3> (r/w)	0 ~ 352 for CCD 0 ~ 320 for CMOS	Left coordinate of window position. <0>
wintop_<1~3> (r/w)	0 ~ 288 for PAL 0 ~ 240 for NTSC & CMOS	Top coordinate of window position. <0>
winwidth_<1~3> (r/w)	0 ~ 352 for CCD 0 ~ 320 for CMOS	Width of motion detection window. <0>
winheight_<1~3> (r/w)	0 ~ 288 for PAL 0 ~ 240 for NTSC & CMOS	Height of motion detection window. <0>
winobjsize_<1~3> (r/w)	0 ~ 100	Percent of motion detection window <0>
winsensitivity_<1~3> (r/w)	0 ~ 100	Sensitivity of motion detection window <0>
update (w)	1	Update the above motion detection settings to take effect

Group: **DDNS**

NAME	VALUE	DESCRIPTION
enable (r/w)	0, 1	Enable or disable the dynamic dns. <0>
provider (r/w)	1 ~ 4	dyndns.org (dynamic) dyndns.org (custom) tzo.com dhs.org <1>
hostname (r/w)	Text string shorter than 127 characters.	Your dynamic hostname. *<blank>*
usernameemail (r/w)	Text string shorter than 63 characters.	Your user or email to login ddns service provider *<blank>*
passwordkey (r/w)	Text string shorter than 20 characters.	Your password or key to login ddns service provider *<blank>*
update (w)	0, 1	Update the above ddns settings to take effect

Group: **UPNP**

NAME	VALUE	DESCRIPTION
enable (r/w)	0, 1	Enable or disable the UPNP service. **<1>**

Group: **App**

NAME	VALUE	DESCRIPTION
scriptname (r/w)	<text string shorter than 255 characters>	File name of script **<script.vssx>**
enablescript (r/w)	0	Disable script
	1	Enable script

Group: **Feature**

NAME	VALUE	DESCRIPTION
event (r/w)	0	
	1	support motion detection/dido/video loss information in video bitstream

Application page CGI command

Note: This request requires administrator privilege.
Method: GET/POST

Syntax:

```
http://<servername>/setup/app.vspx?[method=<value>][&sun=<value>]
[&mon=<value>]
[&tue=<value>][&wed=<value>][&thu=<value>][&fri=<value>][&sat=<value>]
[&begin_time=<value>][&end_time=<value>][&exclude=<value>]
[&eventop=<value>]
[&delay=<value>][&prevnum=<value>][&ssfprefix=<value>][&dihigh=<value>]
[&dilow=<value][&dirise=<value>][&difall=<value>][&motion1=<value]
[&motion2=<value>][&motion3=<value>][&ioalarm=<value>]
[&mdalarm=<value]
[&ioupload=<value>][&mdupload=<value>][&seqop=<value>][&sinter=<value>]
[&smethod=<value>][&suffix=<value>][&resetdo=<value>]
```

Return:

```
HTTP/1.0 200 OK\r\n
Content-Type: text/plain\r\n
Content-Length: <length>\r\n
\r\n
<depends on method value>
If(method == get || method == set)
{
 tue=<value>\r\n
 wed=<value>\r\n
 …
}
Else if(method == normal)
{
 Application page contents
}
```

parameter	Value	description

method	get	Get parameters, if no parameter followed, all the parameters value will be listed. Otherwise, it will list followed parameter value.
	set	Set parameters
	normal	Display normal application page contents
sun	*0/1*	Disable/Enable Sunday weekly schedule check box
mon	*0/1*	Disable/Enable Monday weekly schedule check box
tue	*0/1*	Disable/Enable Tuesday weekly schedule check box
wed	*0/1*	Disable/Enable Wednesday weekly schedule check box
thu	*0/1*	Disable/Enable Thursday weekly schedule check box
fri	*0/1*	Disable/Enable Friday weekly schedule check box
sat	*0/1*	Disable/Enable Satday weekly schedule check box
begin_time	*hh:mm:ss*	Begin time of weekly schedule
end_time	*hh:mm:ss*	End time of weekly schedule
exclude	*0/1*	Disable/Enable all the time except for the above schedule check box
eventop	*0/1*	Disable/Enable Event operation
delay	*1~999*	Delay seconds before detect next event
prevnum	*0~6*	Number of pre-trigger event images
ssfprefix	*<text string shorter than 60 characters>*	Snapshot file name prefix for both event and sequential operation
dihigh	*0/1*	Enable/Disable trigger when input is high
dilow	*0/1*	Enable/Disable trigger when input is low
dirise	*0/1*	Enable/Disable trigger when input is rising
difall	*0/1*	Enable/Disable trigger when input is falling
motion1	*0/1*	Enable/Disable trigger when motion int window #1 is detected
motion2	*0/1*	Enable/Disable trigger when motion int window #2 is detected
motion3	*0/1*	Enable/Disable trigger when motion int window #3 is detected
ioalarm	*0/1*	Enable/Disable DO trigger when DI condition matched
mdalarm	*0/1*	Enable/Disable DO trigger when motion detection condition matched
ioupload	*0/1*	Enable/Disable upload snapshot when DI condition matched
mdupload	*0/1*	Enable/Disable upload snapshot when motion detection condition matched
seqop	*0/1*	Enable/Disable sequential operation
sinter	*1 ~ 99999*	Interval of sequential snapshot in second
smethod	*mail*	Send snapshot by e-mail
	ftp	Send snapshot by ftp
suffix	*0/1*	Enable/Disable FTP put snapshots with date and time suffix
resetdo	*0/1*	Reset/No reset DO when click save button

Example: Enable sequential send snapshot by every 1 second with email.
http://myserver/setup/app.vspx?method=set&exclude=1&eventop=0&seqop=1&
smethod=mail&sinter=1

Drive the digital output

Note: This request requires the privilege of I/O access control.
Method: GET/POST

Syntax:

http://*<servername>*/cgi-bin/setdo.cgi?do1=*<state>*[&do2=<state>] [&do3=*<state>*][&do4=*<state>*][&return=*<return page>*]

Where state is H, L. H means NC (normal close) connected with COMMON and L means NO (normal open) connected with COMMON. The number of DO dependents on the server type.

parameter	Value	description
do\<num\>	*<state>*	H – NC connected with COMMON
		L – NO connected with COMMON
return	*<return page>*	Redirect to the page *<return page>* after the parameter is assigned. The *<return page>* can be a full URL path or relative path according the the current path. If you omit this parameter, it will redirect to an empty page.

Example: Drive the digital output 1 to high and redirect to an empty page
http://myserver/cgi-bin/setdo.cgi?do1=H

Query status of the digital input

Note: This request requires the privilege of I/O access control.
Method: GET/POST

Syntax:

http://*<servername>*/cgi-bin/getdi.cgi?[di1][&di2][&di3][&di4]

If no parameter is specified, all the status of digital input will be returned.

Return:

HTTP/1.0 200 OK\r\n Content-Type: text/plain\r\n Content-Length: *<length>*\r\n \r\n [di1=*<state>*]\r\n [di2=*<state>*]\r\n [di3=*<state>*]\r\n [di4=*<state>*]\r\n

where *<state>* can be H or L.

Example: Query the status of digital input 1
Request:
http://myserver/cgi-bin/getdi.cgi?di1

Response:
HTTP/1.0 200 OK\r\n
Content-Type: text/plain\r\n
Content-Length: 7\r\n
\r\n
di1=H\r\n

Query status of the digital output

Note: This request requires the privilege of I/O access control.
Method: GET/POST

Syntax:

http://*<servername>*/cgi-bin/getdo.cgi?[do1][&do2][&do3][&do4]

If no parameter is specified, all the status of digital output will be returned.

Return:

HTTP/1.0 200 OK\r\n
Content-Type: text/plain\r\n
Content-Length: *<length>*\r\n
\r\n
[do1=*<state>*]\r\n
[do2=*<state>*]\r\n
[do3=*<state>*]\r\n
[do4=*<state>*]\r\n

where *<state>* can be H or L.

Example: Query the status of digital output 1

Request:
http://myserver/cgi-bin/getdo.cgi?di1

Response:
HTTP/1.0 200 OK\r\n
Content-Type: text/plain\r\n
Content-Length: 7\r\n
\r\n
do1=H\r\n

Capture single snapshot

Note: This request require normal user privilege
Method: GET/POST

Syntax:

http://*<servername>*/cgi-bin/video.jpg

Server will return the most up-to-date snapshot in JPEG format. The size and quality of image will be set according to the JPEG settings on the server.

Return:

HTTP/1.0 200 OK\r\n
Content-Type: image/jpeg\r\n
[Content-Length: *<image size>*\r\n]

<binary JPEG image data>

Account management

Note: This request requires administrator privilege
Method: GET/POST

Syntax:

http://*<servername>*/cgi-bin/admin/editaccount.cgi?
method=<value>&username=*<name>*[&userpass=*<value>*][&privilege=*<value>*]

[&privilege=<value>][…][&return=<return page>]

parameter	value	description
method	add	Add an account to server. When using this method, "username" field is necessary. It will use default value of other fields if not specified.
	delete	Remove an account from server. When using this method, "username" field is necessary, and others are ignored.
	edit	Modify the account password and privilege. When using this method, "username" field is necessary, and other fields are optional. If not specified, it will keep original settings.
username	<name>	The name of user to add, delete or edit
userpass	<value>	The password of new user to add or that of old user to modify. The default value is an empty string.
privilege	<value>	The privilege of user to add or to modify. The privilege can be the addition of the following values. Ex: A user with DI/DO access and listen privilege can be assigned privilege as **privilege=dido&privilege=listen**.
	dido	DI/DO access privilege
	listen	listen privilege
	talk	talk privilege
	camctrl	camera control privilege (support only on PT(Z) version)
	conf	configuration privilege
return	<return page>	Redirect to the page <return page> after the parameter is assigned. The <return page> can be a full URL path or relative path according the the current path. If you omit this parameter, it will redirect to an empty page.

System logs

Note: This request require administrator privilege
Method: GET/POST

Syntax:

http://<servername>/cgi-bin/admin/syslog.cgi

Server will return the up-to-date system log.

Return:

HTTP/1.0 200 OK\r\n Content-Type: text/plain\r\n Content-Length: <syslog length>\r\n \r\n <system log information>\r\n

Configuration file

Note: This request requires administrator privilege
Method: GET/POST

Syntax:

http://<servername>/cgi-bin/admin/configfile.cgi

Server will return the up-to-date configuration file.

Return:

HTTP/1.0 200 OK\r\n
Content-Type: text/plain\r\n
Content-Length: <configuration file length>\r\n
\r\n
<configuration data>\r\n

System Information

Note: This request requires normal user privilege
Method: GET/POST

Syntax:

http://<servername>/cgi-bin/sysinfo.cgi

Server will return the system information.

Return:

HTTP/1.0 200 OK\r\n
Content-Type: text/plain\r\n
Content-Length: <system information length>\r\n
\r\n
Model=<model name of server>\r\n
HostName=<host name of server>\r\n
Location=<video on text of server>\r\n
[Preset<0>=<first preset location>\r\n]
[Preset<1>=<second preset location>\r\n]
[...]
PTZEnabled=<PTZ status>\r\n

Where the <PTZ status> is a 32-bits integer, each bit can be set separately as follows:
Bit 0   => Support camera control function 0(not support), 1(support)
Bit 1   => **Build-in** or **external** camera. 0(external), 1(build-in)
Bit 2   => Support **pan** operation. 0(not support), 1(support)
Bit 3   => Support **tilt** operation. 0(not support), 1(support)
Bit 4   => Support **zoom** operation. 0(not support), 1(support)
Bit 5   => Support **focus** operation. 0(not support), 1(support)

D. Technical specifications

- System
CPU: Trimedia PNX1300
RAM: 16MB SDRAM
ROM: 4MB FLASH ROM

- Networking
TCP/IP, HTTP, SMTP, FTP, Telnet, NTP, DNS, DDNS, DHCP
Physical
10BaseT Ethernet or 100BaseT Fast Ethernet, Auto
negotiation

- Video
MPEG4(simple profile) or MJPEG selectable
JPEG for still image
Features
Adjustable image size, quality and bit rate
Timestamp and text overlay
Resolution: PAL
Up to 25 frames at 176x144 pixels
Up to 25 frames at 352x288 pixels
Up to 25 frames at 704x576 pixels

- Camera specifications
TV7210/TV7211: 380TVL Sony Super HAD CCD
0.5 Lux @ F2.0
Picture elements: 537 (H) x 597 (V)

TV7212/TV7213: 480TVL Sony Super HAD CCD
0.5Lux @ F2.0
Picture elemtent: 795 (H) x 596 (V)

TV7214/TV7215: 540TVL Sony Super HAD CCD
0.1 Lux @ F1.2
Picture elements: 795 (H) x 596 (V)

TV72167TV7217: 540TVL Sony Exview HAD CCD
0.01 Lux @ F1.2
Picture elements: 795 (H) x 596 (V)

- Lens
f=3.5-10.5mm DC-Variofocal-Lens IR-corrected
(TV7216,TV7217 with auto-IR-cut-filter)
f=3.5-8mm DC-Variofocal-Lens (TV7210-TV7215)

- Audio
32Kbps, 24Kbps, 8Kbps
Acoustic echo cancellation, Full duplex audio
communication

- Microphone
omni-directional
frequency: 20 - 20000 Hz
S/N > 58 dB

- General I/O
1 sensor input (max. 12VDC@50mA)
1 relay output (max. 24VDC@1A)

- LED indicator
System power and status indicator
System activity and network link indicator

- Dimensions
215mm (L) x 90 mm (W) x 65 mm (H)

- Weight
500g

- Power
Consumption: max. 9.6W
Power adapter included
Adapter input: 100-240VAC, 50/60Hz, 0.4A
Adapter output: 12VDC, 1.5A

- Operating environment
Temperature: 0~35°C
Humidity: 85%RH

- System requirements
operating system
Microsoft Windows 98SE/ME/2000/XP
Internet Explorer 5.x or above

16-Channel Record Software

User manual

Version 2.0

Installation

Hardware requirements

Before installing this application software, please make sure that your computer meets the following minimum system requirements:

Operating system:	MS Windows 2000/XP
CPU:	2.0 GHz Intel Pentium IV or AMD Athlon
Memory:	256 MB SDRAM
Hard disk:	40 GB
Graphics:	nVidia, GeForce series with 32 MB playback memory or higher ATI Radeon series with 32 MB playback memory or higher

The following information should help you to install this program correctly on the recommended computer systems.

This application software supports CPUs of the Intel Pentium IV series or higher versions and AMD Athlon CPUs with a minimum of 2.0 GHz exclusively.

To avoid functional limitations, you should use this program under Win2000 or Windows XP.

To prevent system crashes, disable all energy-saving and screensaver functions.

Suggestions

The following suggestions will help you to run our software faster and smooth. All suggestions are optional:

1. Maximum supported HDD space
   200 GB is the maximum supported hard disk space. Performance can't be guaranteed if

2. Windows provides a system restore function. But when system restore is turned on, the disk I/O would be much worse. This mean the recording of our application would be affected dramatically. So we recommend turning off the system restore for the application's recording disk. You can disable system restore in System Properties page (Start / Control Panel / System / System Restore).

3. Exclude file protectation for specified files in AntiVirus. The following file extensions represents the specified files that should be excluded in AntiVirus to accelerate our application.
   *.DBS , *.DES , *.DIA , *.DSK , *.DSS , *.HGD , *.WAP , *.BCK

Software installation

The following steps describe the software installation.

1. After you insert the CD in the CD-ROM drive, installation starts automatically. If installation does not start automatically, open the folder on the CD and start the "autorun" program. The following installation window opens:

2. This page gives you hints on the user's manual, release note, the installation wizard and the installation software of the digital video recorder software. To start installation, click "**16 channel Software**" and then "**Install the 16 channel software**". The InstallShield Wizard opens.
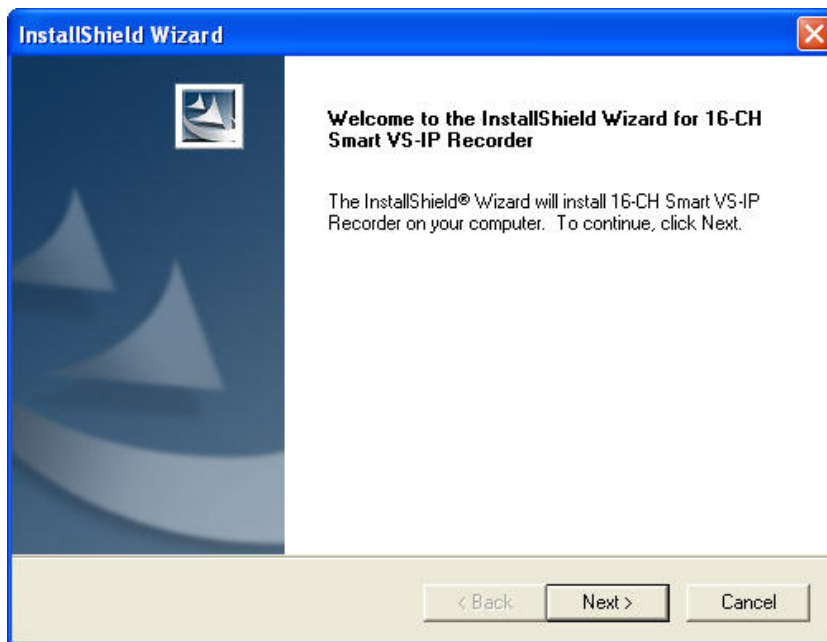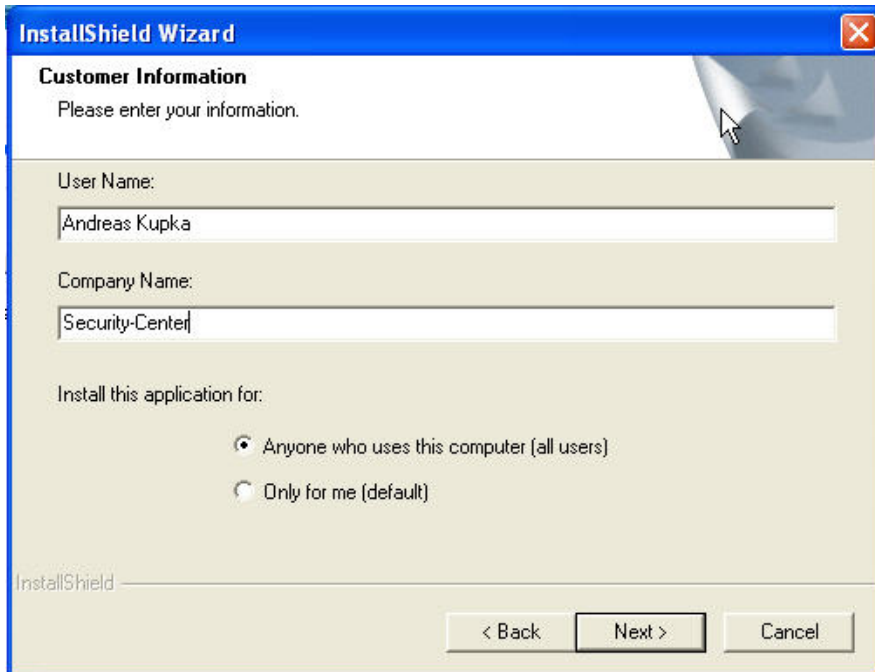
3. Click to continue installation. If the window below appears on your screen, an older version of the recorder is already installed (this is a video-only version – i.e., no audio stream is transmitted). To keep the old version, choose the second alternative. If you are installing the recorder software for the first time, this window does not appear, and you can go straight to step 4.
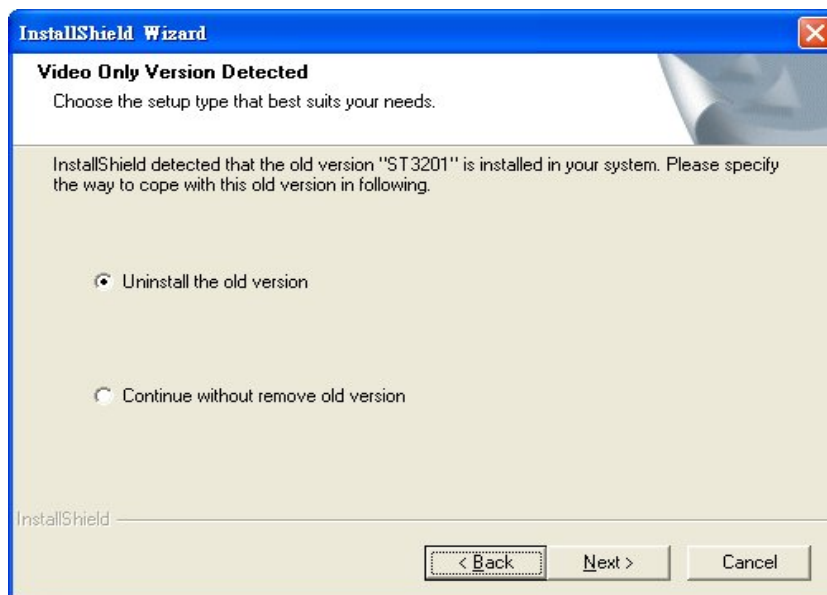
Read the license agreement carefully. If you agree with the conditions, confirm by clicking .
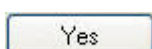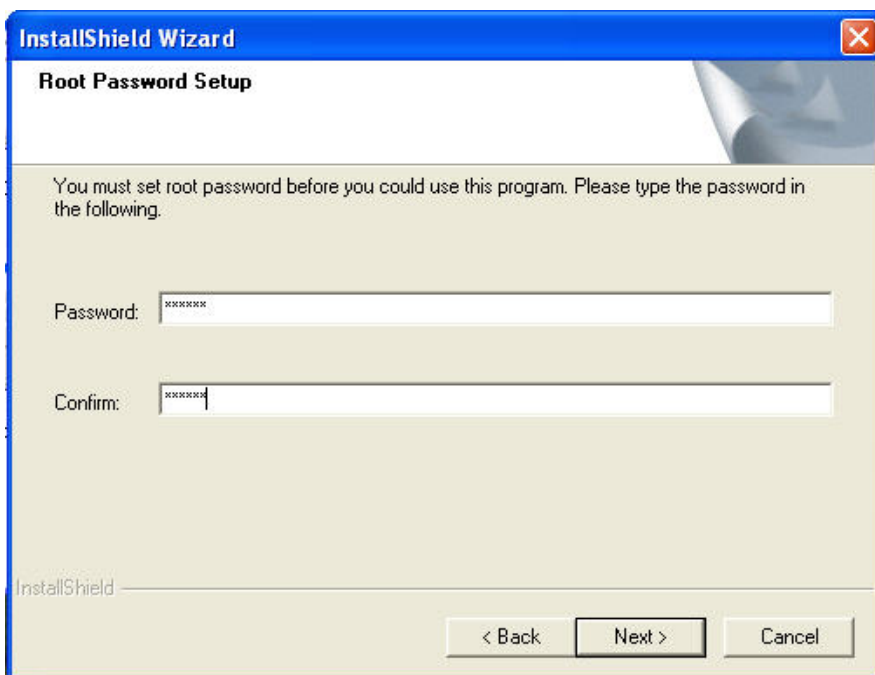
4. The **Customer Information** dialog box appears. This dialog box asks you to enter a user name and a company name. Click [Next >] to continue installation. Under Windows XP, you can also define access permissions.

5. Enter a root password and confirm the password. Click [Next >] to continue installation.

6. Choose the installation folder and click [Next >]. If you want to change the installation folder, click **Browse….**
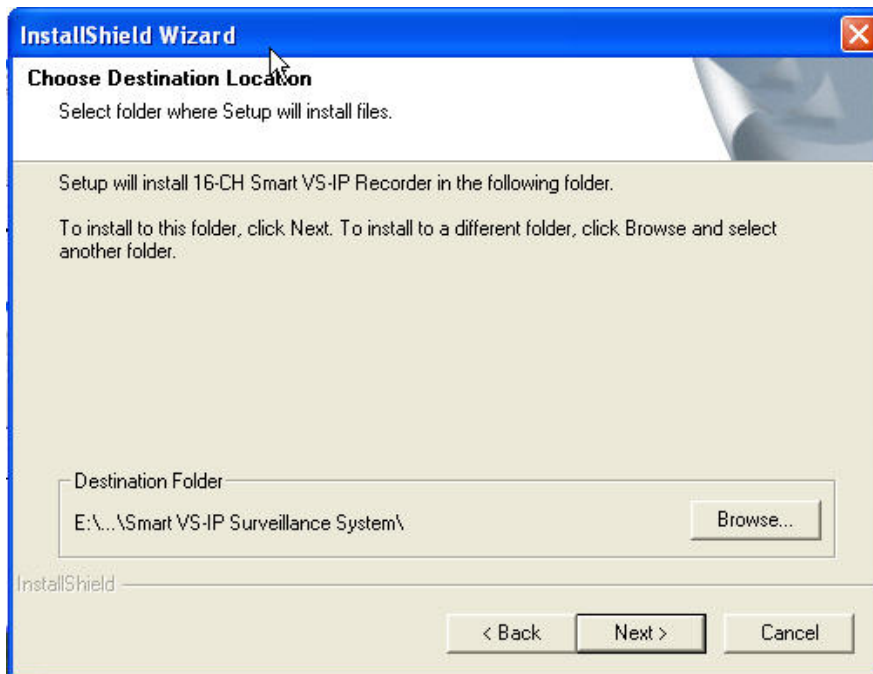
7. Select a program folder where you want to install the application software and click [Next >].
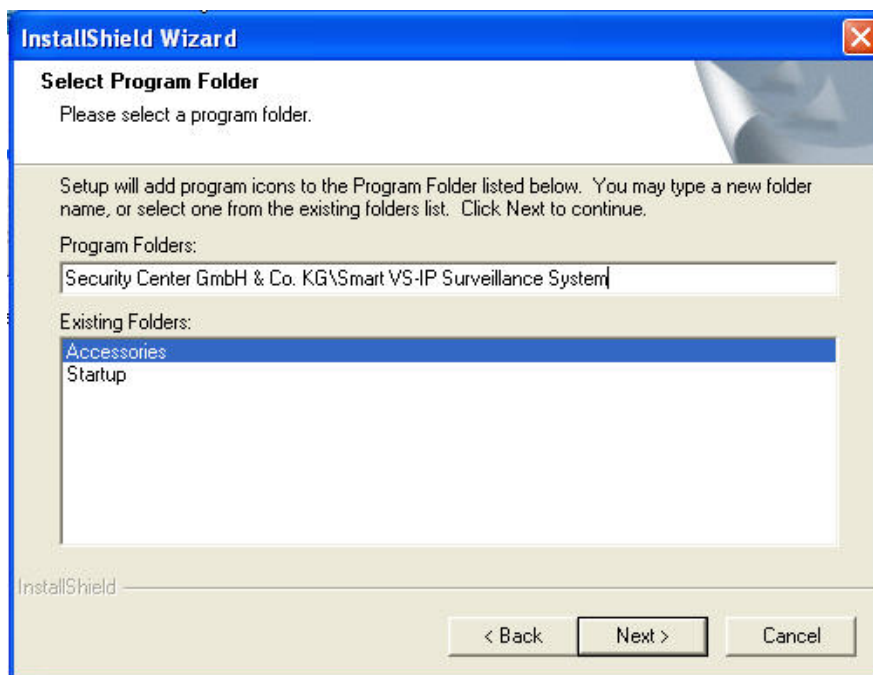
8. After checking all setup information, click [Next >] to start file transfer and the

    updating of the Registry entry.
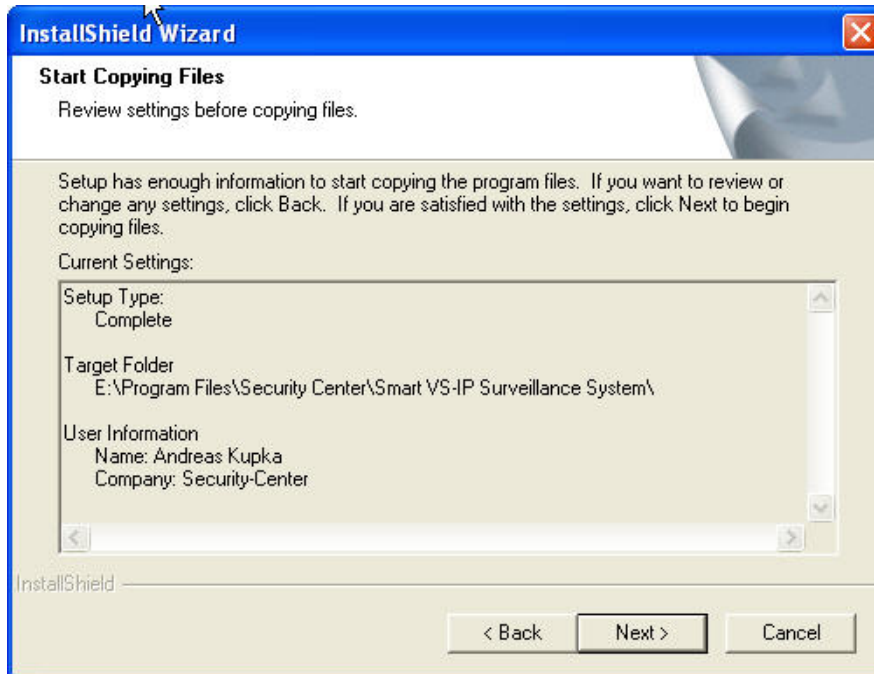
9. Click [Finish] to end installation. The program is now installed.
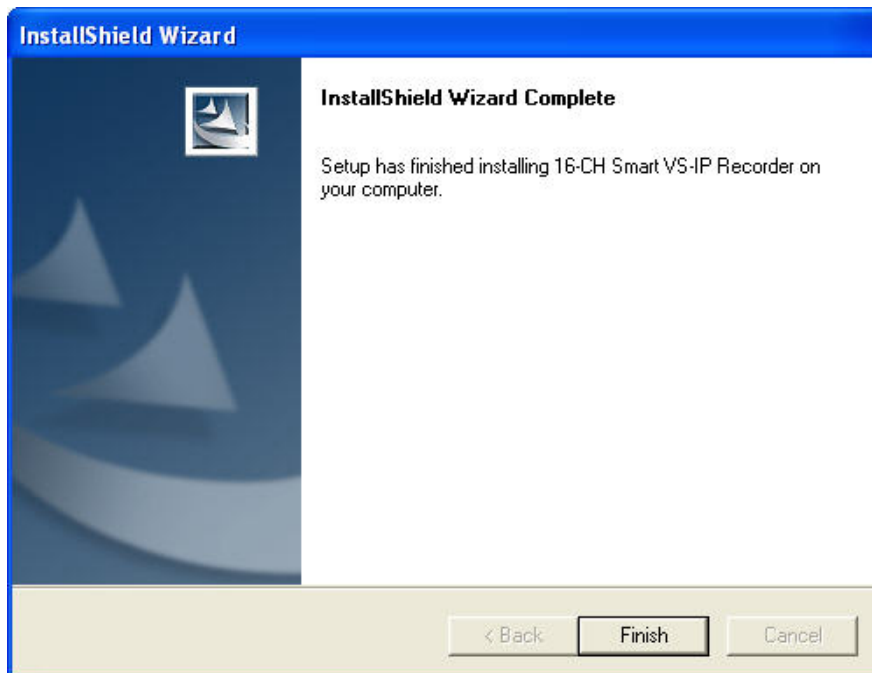
First program start

Before you can start the surveillance program, you have to change some IE (Internet Explorer) settings. Enable **Download signed ActiveX controls** under **Start** > **Control Panel** > **Internet Options** > **Security** > **Custom Level** > **Settings**.
You can also find this path via the IE browser as shown in the following. Change the settings as described below.
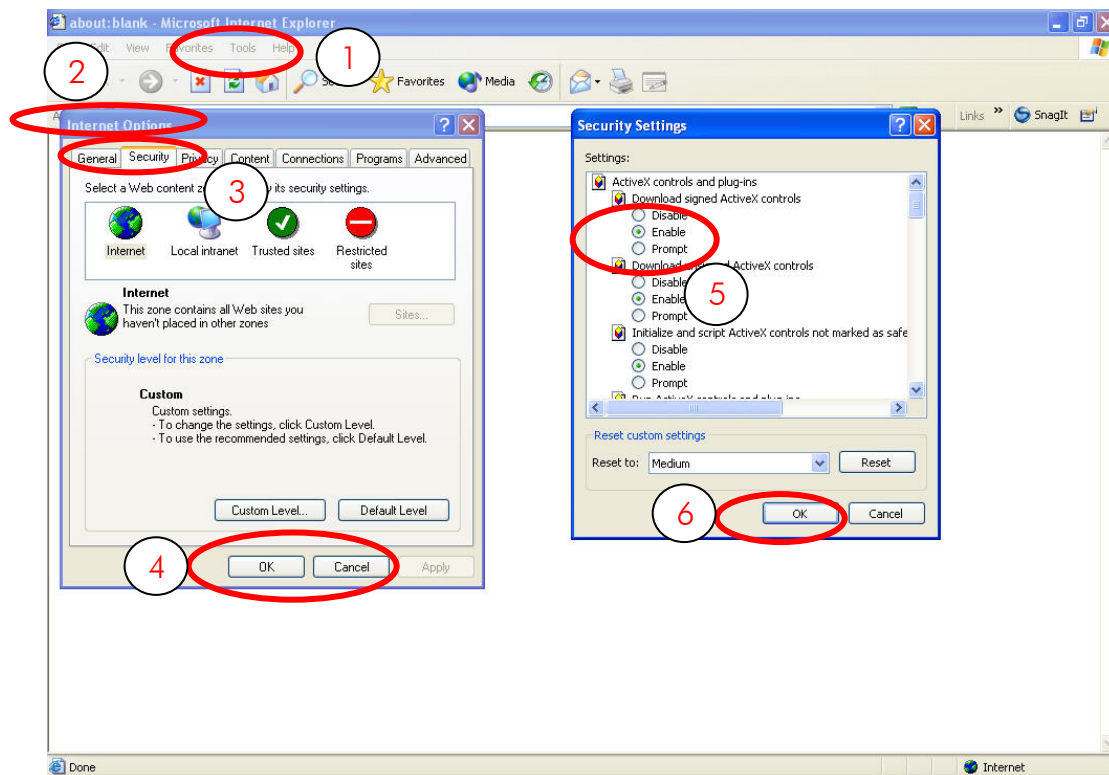
After changing the settings, you can start the surveillance program.

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Launcher

The Launcher is a control program that allows you to start the surveillance or playback program quickly. It also enables you to start recording before logging on. The Launcher is on the right of the Windows system bar.

Security

You can start the Launcher without entering your user name and password. Once started, the Launcher runs automatically. But if you click the Launcher icon on the system bar, a dialog box opens and asks for your user name and password. This happens when the menu is first opened or if the Launcher is locked. If the user cannot authenticate him/herself, no program menu appears.

If your user name and password are accepted, all functions are fully available to you. You can lock the Launcher as a security measure. If it is locked, you have to enter your user name and password again to unlock it.

Only the login user or users of root group can unlock the program when the program is locked.

The login window:
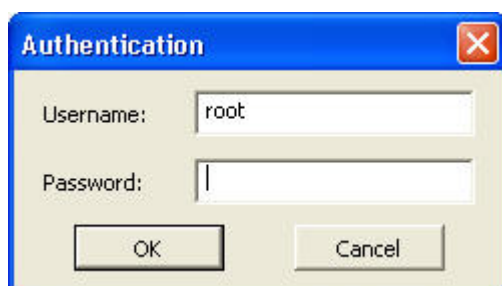
The user name is **root**. The password was defined during software installation.

If the Launcher is locked, the **Unlock** dialog box looks like this:

After three failed attempts, the input field is disabled for 60 seconds.

User interface of Launcher

The Launcher user interface:
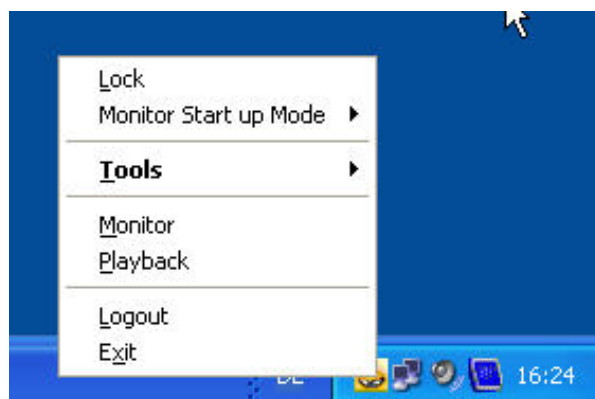
The actual user interface for the Launcher is an icon on the Windows Start bar. If you click the icon, the pop-up menu appears.

The menu options are as follows:

Lock

Select this function to lock the Launcher. If a user tries to open the menu, a dialog box opens and asks for the user name and password.

Monitor startup mode

Do not Autorun – The monitor will be run as a service but will be not invoked automatically after Windows boot up. Manual startup is needed.

Autorun – The Monitor will be run as a service procedure and it will be invoked after Windows boot up automatically without login. Recording procedure will be also invoked will be also invoked if proper schedule is configured.
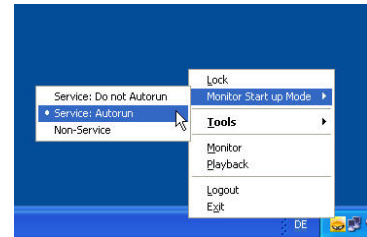
Tools

This menu provides the following functions: Change password and User management.

I. Change password

Please type in the old password, new password and the password confirmation.

II. User management

The tool can be used to add, modify or delete users. The maximum available number of users is 30 and the number of available users will be shown in "Recource" field. When you want to add a new user, you should specify the user name, password and the user's group. You can modify users status in Modify Status window.
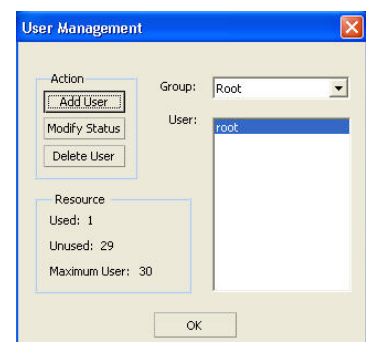
The following table represents the privilege of each group in Launcher.

Function	root	Power User	General User
Monitor Startup Mode	√		
User Management	√		
Playback	√	√	
Change Password	√	√	√
Exit	√	√	√
Lock/Unlock	√	√	√
Logout	√	√	√

Monitor

Starts the monitor.

Playback

Starts playback.

Exit

Exits the Launcher. If you select this option, a message box appears asking you to confirm program exit. You are also warned that the monitor and playback are closed when you exit the Launcher.

Monitor

Features of monitor software

1. Traditional surveillance features
   Realtime display
   P(an)T(ilt)Z(oom) Control (PTZ)
   Recording

2. Special surveillance features
   Simultaneous realtime surveillance with audio and video recording
   High-quality fullscreen display
   High compression rate
   Support of max. 16 cameras with different display settings
   Playback
   Event-triggered recording with preview
   Fast database search
   Event alarm
   Password protection

3. Different recording modes
   Event-triggered, scheduled and manual recording for each camera

4. Intelligent database storage
   Precise time specification, time interval, motion-triggered events and
   digital input events
   Just-in-time snapshots
   AVI export
   Motion detection with three alarm windows for each camera

Monitor settings

This section gives you an overview of the monitor settings. Some of the monitor settings are described in detail in the following sections.
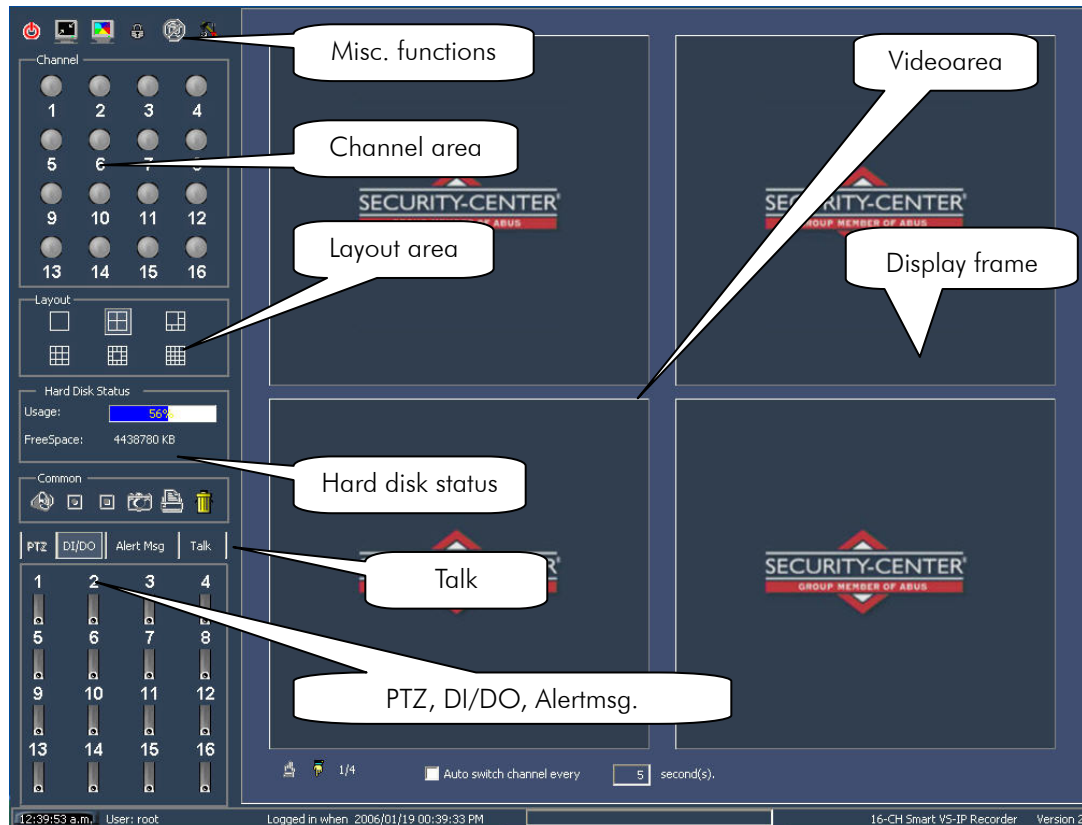
The monitor screen has the following sections:

Miscellaneous functions

These functions are: exit program, minimise, maximise, full-screen display, lock program, switch off alarm tone and a configuration menus for camera configuration, global settings, display and UI settings (user interface), scheduler settings, video/audio database backup and the information of this application softare. Operating hints are displayed if you move the mouse over any of these functions.

Channel area (camera)

This area displays the status of each camera. The information includes connection status, recording status, selection status and alarm status.

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<u>Video area</u>

Here you can see the video of the selected channel in the display frame. The number of display frames depends on the camera view selected by the user. You can also make settings for the video display.

<u>Display frame</u>

You can change the display layout here. There are six different layouts: 1, 4, 6, 9, 13 or 16 display frames in the video area.

<u>Hard Disk Status</u>

This area informs you about the status of the hard disk on which the video database is stored to ensure that sufficient memory is available for the video recordings.

<u>Common control area</u>

Contains the volume control, manual recording, video printout, snapshots, and the trash can for removing a video from the display frame.

<u>Control of PTZ functions (Pan, Tilt, Zoom), DI/DO, alert messages</u>

This area is used for controlling the PTZ functions, settings automatic camera pans, automatic patrols, and presetting the recording location of the selected channel. However, the camera must have a video server or a network camera with its own PTZ support.

<u>Control of digital input and digital output</u>

You can receive digital input signals and send digital output signals to the video server or network camera.

<u>Alert message</u>

Displays the latest alert messages of the connected peripherals.

<u>Talk</u>

If the connected network camera / videoserver series product supports two-way audio function, the tool can be used to talk with remote side by using additional device, such as microphone.

Logging in

Authentication takes place in the Launcher. If the user was accepted by the Launcher login, the monitor view can be started without further authentication. If the user did not log in to the Launcher, the login screen appears again and has to be filled in order to display the video screen. The user protection system has three privileges, the administrator privilege (root user), power user and general user.

The privilege of each group
The administrator has the right to access the video server and the network cameras as well as to change local settings. This administrator privilege is NOT the administrator privilege of the video server and the network cameras. The settings of every selected video server and every network camera can only be changed if the user has the administrator privilege for the respective server.

Function	root	Power user	General user
Backup	√		
Camera configuration	√		
Display & UI settings	√		
Global settings	√		
Record	√		
Schedule	√		
DI/DO control	√	√	
PTZ contol	√	√	
Change layout	√	√	√
Lock	√	√	√
Printer	√	√	√
Snapshot	√	√	√
Stop alert	√	√	√

Remember: To change the settings of the video server or network camera, you need the administrator password for each of these products.

Configuring the camera

At first login, the application software must be configured in the **Camera Configuration** menu. To make this setting, you need administrator privilege.
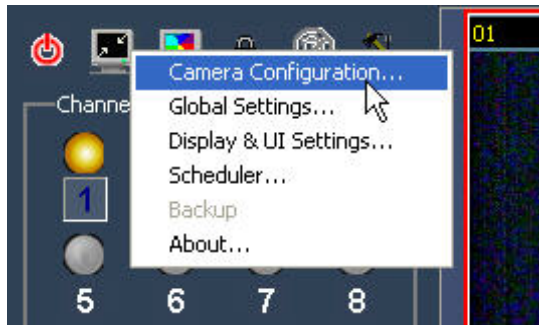
IMPORTANT: When you open the **Camera Configuration** menu, a warning is displayed telling you that all recording processes will be stopped.

Camera configurations

This section tells you about local connection settings and the function settings of each camera. For the configurations of network cards and video servers, see the respective product instructions.

NOTE: When making local camera settings, make sure you do not use non-permitted characters for the path to the location such as ""\ / : * ? " < > |". Incorrect path names can result in a malfunction of the program. You can change the path under **Video** > **Text on Video**.
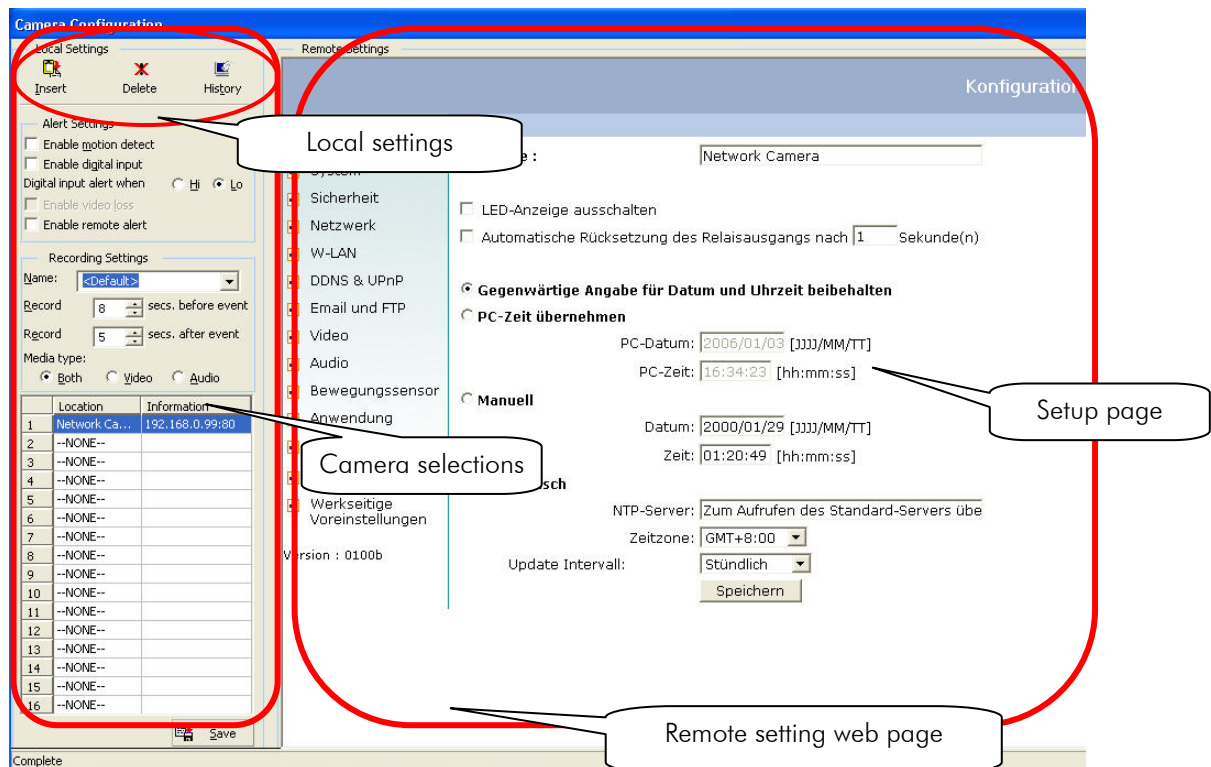
Local Settings

The **Local Settings** field contains three functions.
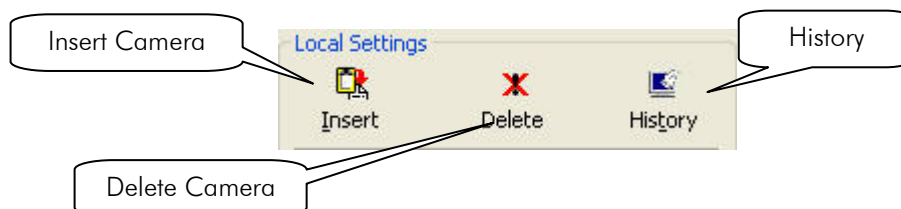
Insert

Use this function to add a video server or network camera to the camera list. If you click **"Insert"**, the **Insert New Channel** dialog box opens.
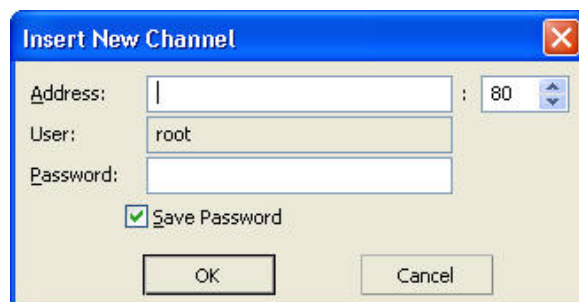
Enter the IP address, port and administrator password of the video server or network camera and

then click "**Ok**" to close the dialog box. The system now tries to connect to the selected camera. If the attempt is successful, the camera appears in the camera list.

Delete

Use this function to remove a selected video server or network camera from the camera list.

History

Use this function to display a list of the last 16 (max.) cameras added to the current camera list. If you select one of the cameras on this history list, it is added to the current camera list.

Alert and Recording Settings

Alert options

Record Settings
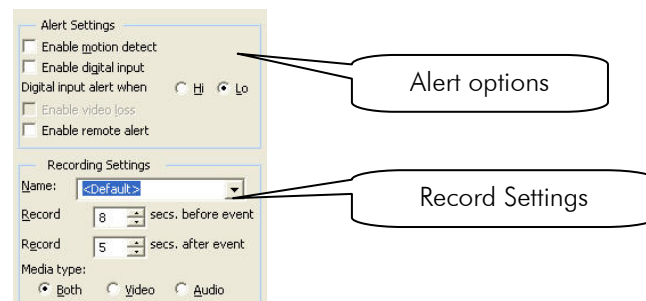
Alert Settings

These settings tell the program how to handle motion detection messages and alarms of the external input.

Enable motion detect

If you enable this field, the program releases an alarm tone if motion is detected on the specified channel.

Enable digital input

If this option is selected, an alarm tone is triggered by a signal at the external input of the camera or the video server.

Alarm at NO/NC (HI/LO)

Defines the setting of the digital input. If no contact is connected, select **NO/LO** (normally open).

Enable video loss

Enable this option will trigger alert when video loss. The video loss will occur when a video server is connected and no proper camera signal is available.

Enable remote alert

Alert sound will be played on remote side if the option is enabled, alert sound has been configured and the one of the three alerts above (motion/digital/video loss) triggered.

Recording Settings

Name

In diesem Feld kann die eigene Adresse näher spezifiziert werden. If you leave this field blank, it is given the value **<Default>**. The default value links the character string in the **Text on Video** field of the server with an underscore and the channel index.

Record x secs. before event

If event-related recording mode is enabled using the schedule, you can use this setting to regulate the recording time. The recording includes the time before the beginning of the alarm event.

Record x secs. after event

Defines how long recording continues after the beginning of the alarm event.

Media type

Defines the media type (video, audio, both) recorded.

Changing the camera sequence in the list

On the camera list, you can use the "Drag & Drop" function to change the sequence of connected video servers / network cameras.

Step 1:   Step 2:

<u>Saving your changes</u>

Click [Save] in the bottom left corner of the screen to save all camera setting changes.

NOTE: If you want to change the remote settings of a video server / network camera on the website on the right of this window, you have to confirm these changes by clicking **Save** on this page (for changes to the settings of the local IP surveillance system and for setting changes of the video server / network camera, the **Save** buttons are different).

Global Settings

After all video servers / network cameras have been connected, the global settings have to be made for all connected servers. These include the video database directory, hard disk usage, and selection options for the video view.
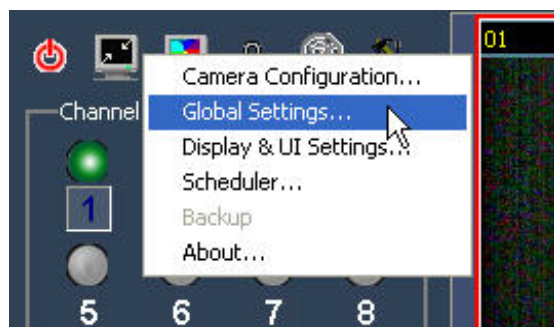
IMPORTANT: A warning is displayed telling you that when you open the Global Settings window, all recording processes are stopped.

Backup status information
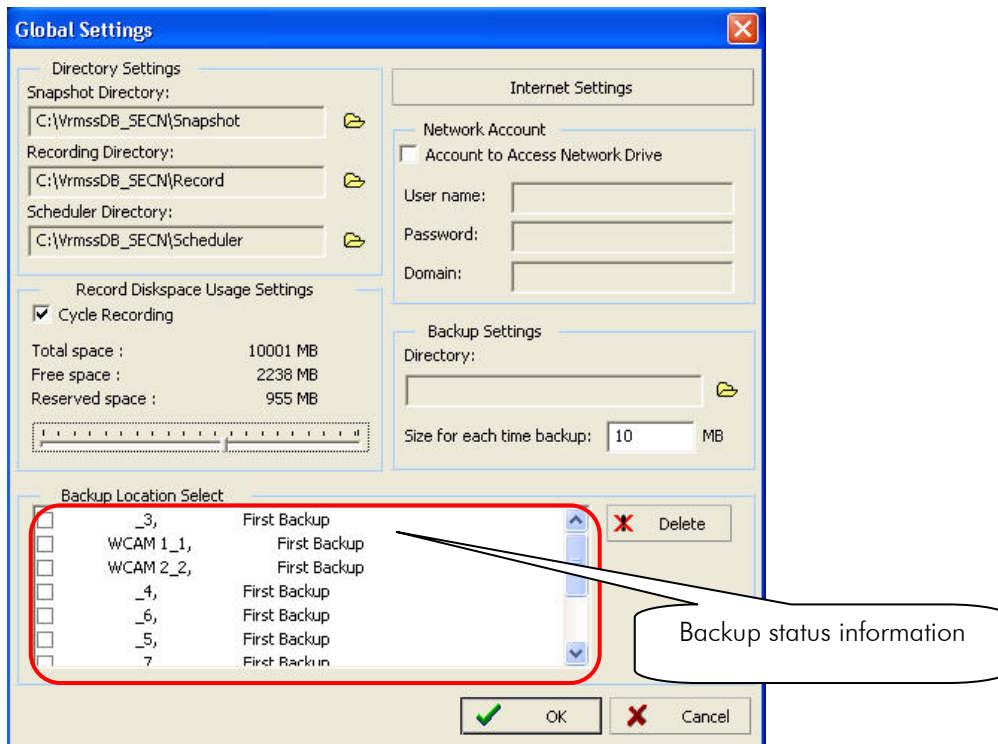
Directory Settings

Snapshot Directory

Snapshots of the video channels in *.bmp format are saved in this directory.

Recording Directory

The recorded video data is saved in this directory.

Scheduler Directory

The basic settings of the schedules (plots) and the user-defined schedules for the recording program of each channel are saved in this directory.
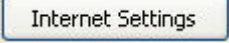
Cycle Recording

If you enable this option, the database system overwrites the oldest data when the size of the active database reaches the capacity of the memory space available. If this option is not selected, a warning is displayed when memory space becomes short. When the memory limit is reached, recording stops.

Reserved space

Shows the amount of memory space reserved on the hard disk for other applications.

Internet Settings

Set the proxy server and IP filter after clicking [Internet Settings]. This setting is for connecting

the remote video server or the network cameras to the intranet via the proxy server.
The proxy server is activated by clicking this selection field. If both the proxy server and IP
restrictions are enabled, the listed IP addresses are not used as proxy server. The listed IP address
is often the address assigned to the video server or network cameras.

Internet Proxy Settings

Proxy Settings

Activate Proxy Server

Using proxy server

Proxy: Port: 80

Port-Settings

Activate IP Filters

Restriction
Do not use proxy starting with following address

Add an IP address to list

Add

Delete

Enter IP Address here to add

Delete an IP address from list

IP address list

OK   Cancel
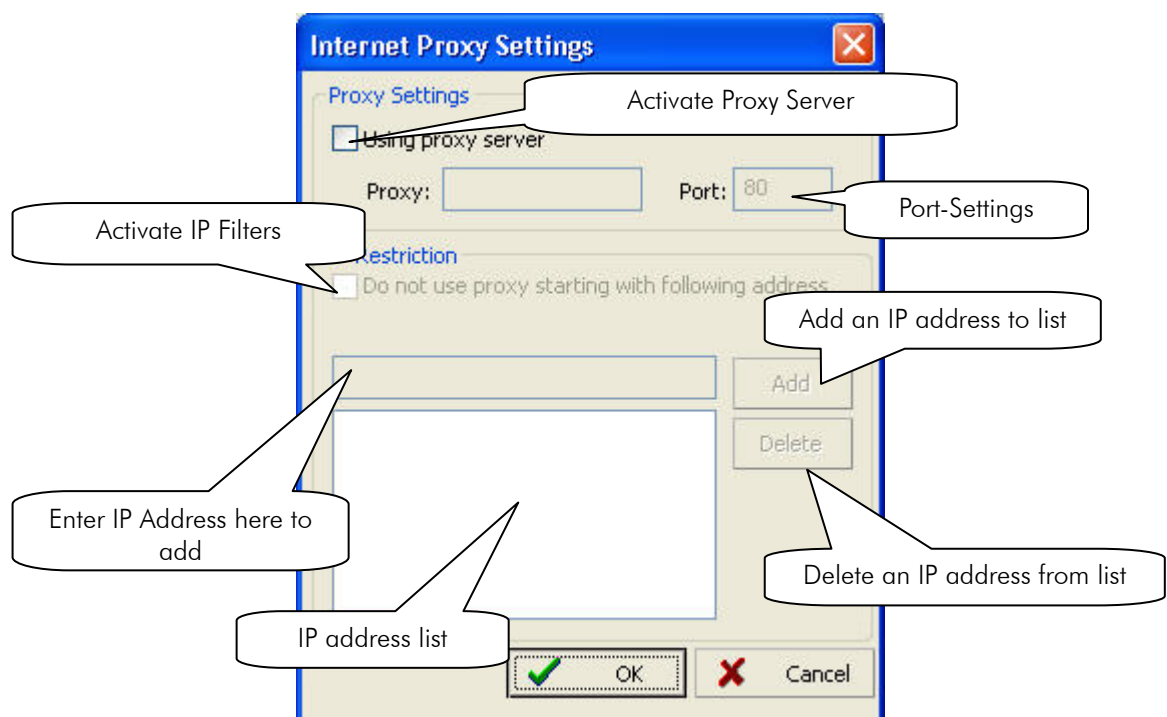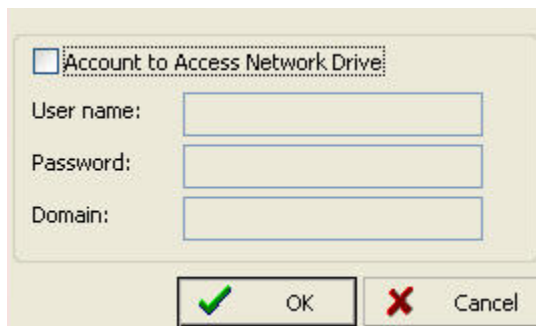
Backup Settings

Select the directory for the video database backup – e.g., a remote hard disk – and set the size of the backup medium.

Backup Location Select

This field contains the settings for the backup and the deletion of the video database. Mark the selection field to choose the channels for which you want a backup. Click **Delete** to remove the video database. Different types of backup status information are displayed for each channel. Normally, the status information shows the time of the last backup – i.e., the time at which the last backup was made. **No Data** means that no video data was recorded for this channel. **Saved all** means that all data of this location was backed up. **First Backup** means that video data from this location is currently being recorded and that no backup has been made.

Account for Access Network Drive

To set the recording path to the network drive, enable **Account to Access Network Drive** and enter your user name, your password and the domain. This account must also be installed to back up data in the network.

Display & UI settings

Options of video display and alert settings can be modified in
Display & UI settings dialog. Recording and monitoring can be
continued when you open this dialog.
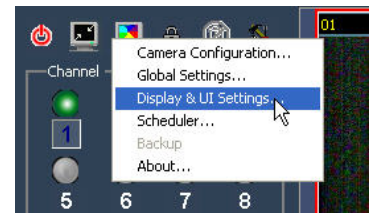
Local Alert Settings

You can select individual sound files (*.wav) for the alarm result. Press the **Play** button (with the
right-facing black arrow) to hear the selected sound.

Remote alert settings

As local alert settings, you can load *.wav file for sound of alert triggering and the sound will be
played on the remote side.

Snapshot Format

There are two kinds of snapshot format (*.jpg, *.bmp) that can be selected by user.

Modulation Mode

You select the format of the input signal (NTSC, Europe Standard PAL or CMOS) in order to be
able to show the original resolution of the video data stream of the remote video server or the
network cameras.

NOTE: Select the input signal format according to the camera type or the CCD module type of
the remote video server or the network camera.

<u>Display Options</u>

There are two status displays for each display screen. The upper display shows the camera location and the local time of the recording location. The lower display shows the connection time and the recording time. Each display can be switched on or off. You can also enable full screen mode. If a status display is selected, it is visible on all channels both in normal and full screen display.
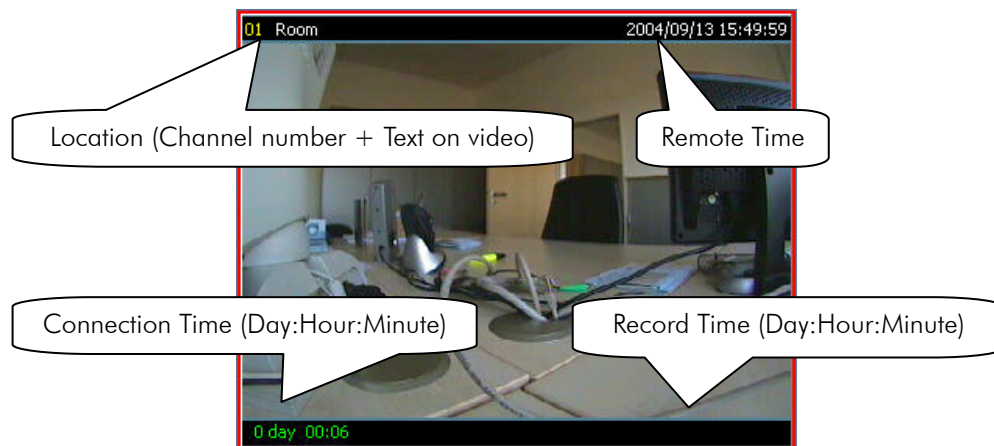
<u>Miscellaneous</u>

The menu option **Click on image to enable PTZ** first starts the PTZ function of the corresponding camera (if present) when selected in the display area.

"Enable PTZ hot key"

When the option is enabled, user can control PTZ camera by using keyboard. The following table represents functionality of each hot key:

Hot Key	Function
NUMPAD_0	Autofocus
NUMPAD_1	Focus -
NUMPAD_2	Down
NUMPAD_3	Focus +
NUMPAD_4	Left
NUMPAD_5	Home
NUMPAD_6	Right
NUMPAD_7	Zoom -
NUMPAD_8	Up
NUMPAD_9	Zoom +
NUMPAD_DIVIDE	Pan
NUMPAD_MULTIPLY	Stop
NUMPAD_SUBTRACT	Patrol

<u>Apply to new device</u>

After reconnected to network camera or video server, if monitor found that the server type has changed, for example, the original camera is with built-in PT lens, but the connected device is a video server. This setting tells the monitor to accept the new device and use the previous setting values (such as schedule and recording media type, … etc.).
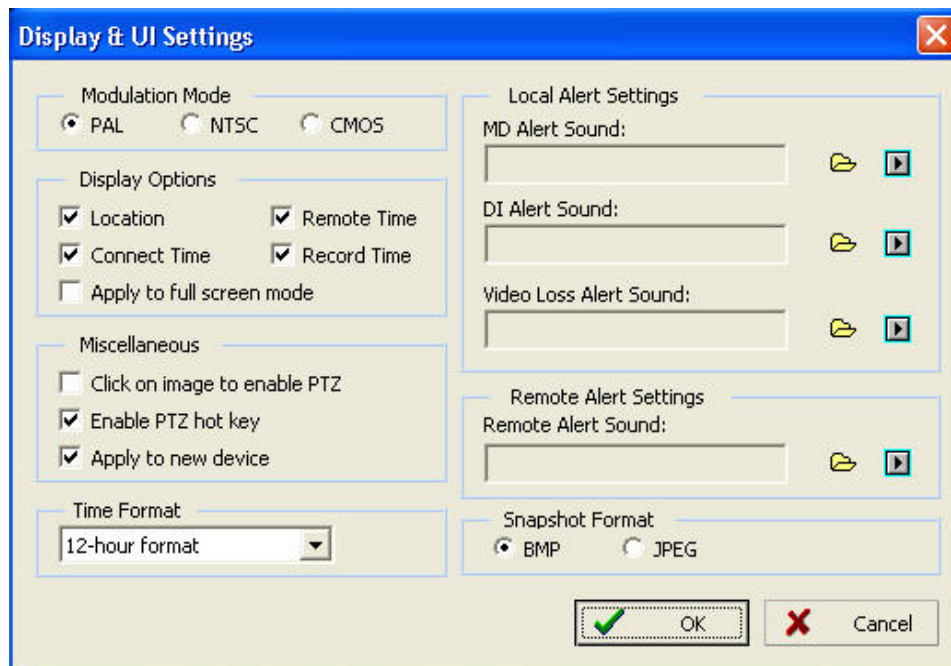
<u>Operating elements of the monitor view</u>

Connecting to video server / network camera

<u>Channel</u>

After connecting the video server / network camera, you can drag the camera and drop it in the video area. If no camera is selected for a channel, the channel number is underlaid grey. If a camera is selected for a channel, the channel number is shown in blue. This channel is connected to the video server / network camera. If you have the necessary user privileges, you can now select this camera and drag it to the video area to display the remote video, and you can also use other features.

Each channel number is assigned a light signal showing the channel status:

Off

The channel is not connected to a remote video server or a network camera.

Green

Shows that the video server / a network camera is connected to this channel and that the video is running in the video area.

Orange

Shows that the video on this channel is being saved to the media database. Realtime recording also takes place without realtime surveillance for the respective channel.

Red

Shows that the connection to the server was unexpectedly interrupted – e.g., by a power failure – and the monitor software is attempting to reconnect to the server.

Flashing

If the motion detection mechanism is enabled for the video server / network cameras, the light of the corresponding channel flashes if motion is detected.

No Connection

Recording

Connected an monitoring

Reconnect

Selected Channel

Configured Channel

Not configured channel
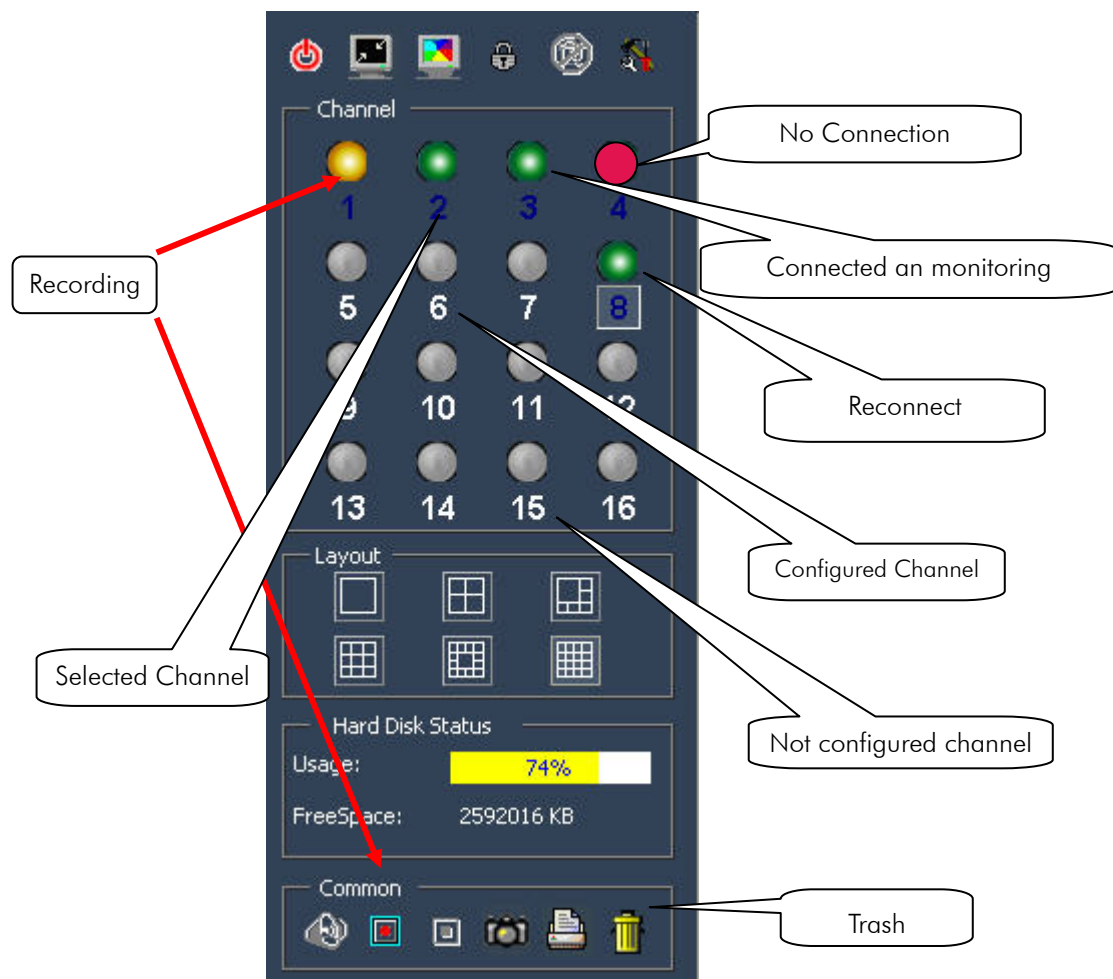
Trash

If you don't want to monitor a video any more, you can drag it (in the video area) to the trash can (in the **Common** control field). The following steps describe the Drag and Drop procedure.

Video display of a specific channel

1. Move the mouse pointer to a channel number.
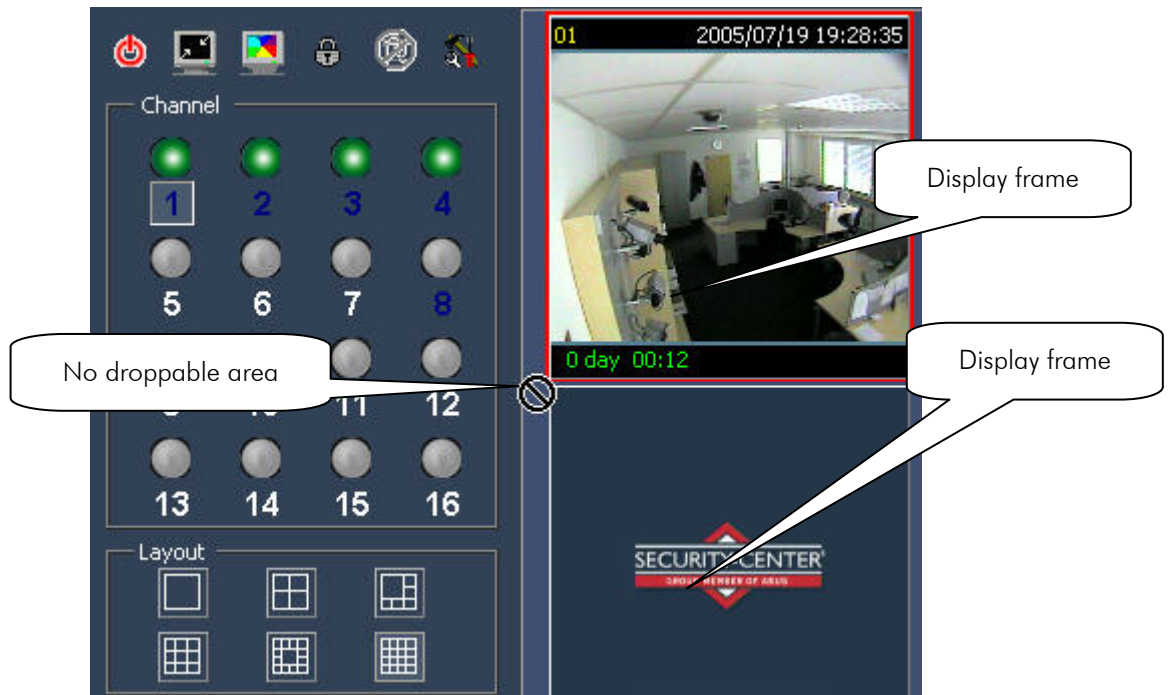
2. Press the left mouse button and keep it pressed, and drag the mouse pointer to the display field in the video area. The mouse pointer shows whether the selected object can be dropped in the selected area.

3. Move the mouse pointer to as area in which you can drop the object (in this case, the video area) and release the mouse button. In each layout, each channel corresponds to a single window only in the video area. That means that dragging the channel number to the display window can be considered as an exchange of channels in the display window. Therefore each newly selected video replaces the current video in the respective display field. You can use this feature to exchange channels between the different display windows. For example, the video of channel 1 is shown in display window X, and the video of channel 2 in window Y. The channels are exchanged between the display windows if the video of window X is dragged to window Y and vice versa.

Similarly, you can drag channels from their current display window to a free display window. You can perform these functions by a simple drag and drop with the mouse. This makes customising the layout of the video display for surveillance simple and convenient.

Note: In all layouts, the monitor automatically connects newly inserted channels to free display windows – i.e., the respective channel is immediately displayed in the layout after the camera setting dialog box is closed. If you close a connection in a layout manually, this function is disabled. There is no way of restoring it.
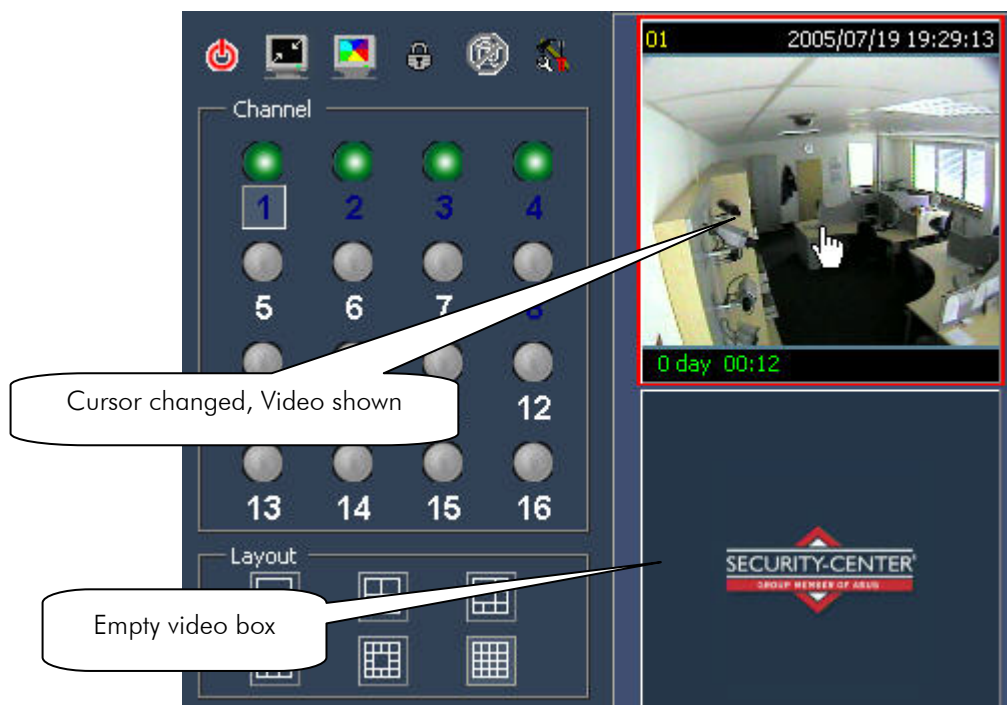
Closing a channel in the display window

1. Move the mouse pointer to the display window assigned to the channel you want to close.

2. The mouse pointer changes to a hand when it is moved to the display window. Press the left mouse button and keep it pressed.

3. Drag the mouse pointer to the trash can in the **Common** control field of the monitor tool.

4. Over the trash can, the mouse pointer changes into an arrow. Release the left mouse button. The video disappears from the respective display window.

Note: Although the channel in the current layout is closed, the network connection still exists. If the network connection is closed, the monitor cannot know when an event is triggered.

Move the cursor here and release the mouse button.

Click and hold the mouse pointer.
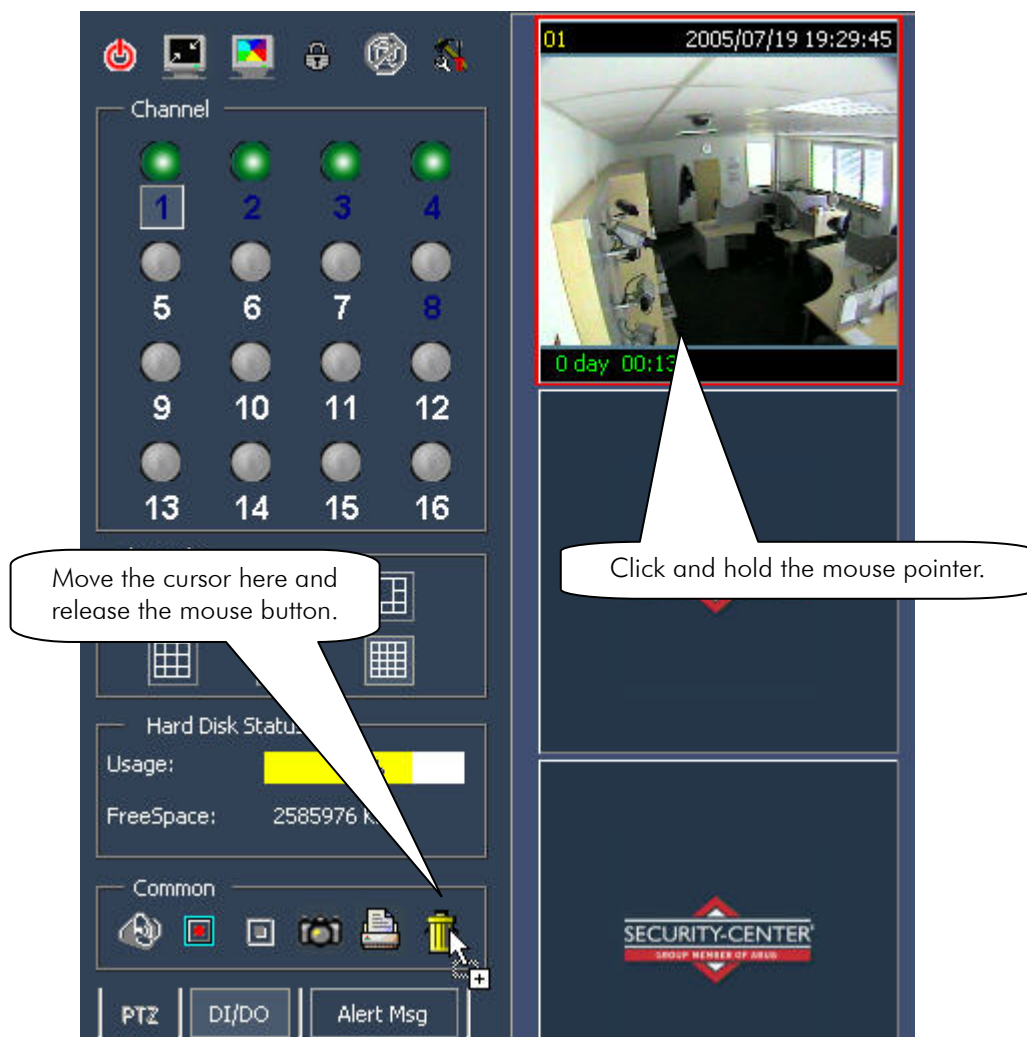
Camera view

There are six ways of showing the display window in the monitor tool. Left-clicking the desired view activates this view. In any layout, you can select the channel number and move it via Drag and Drop to any display window of the video area. The video recordings of the corresponding channel are displayed. As described above, you can insert step by step the videos of the individual channels in the display window of the video area. You can then swap videos between the various display windows using the same method.

Single picture view
4 cameras layout
6 cameras layout
9 cameras layout
13 cameras layout
16 cameras layout

Double-Click for single view.

Back to previous layout
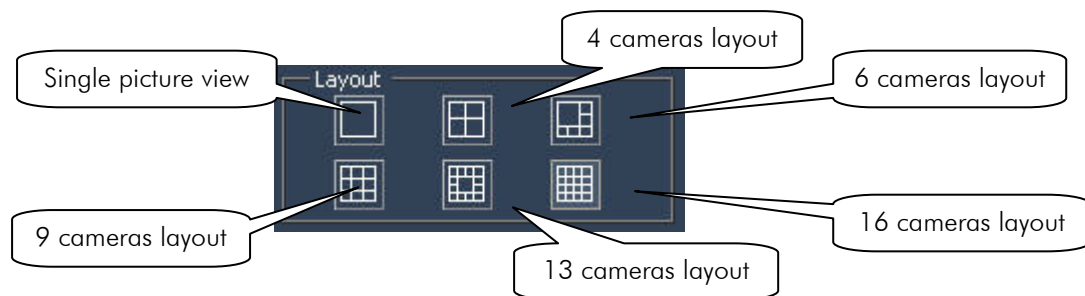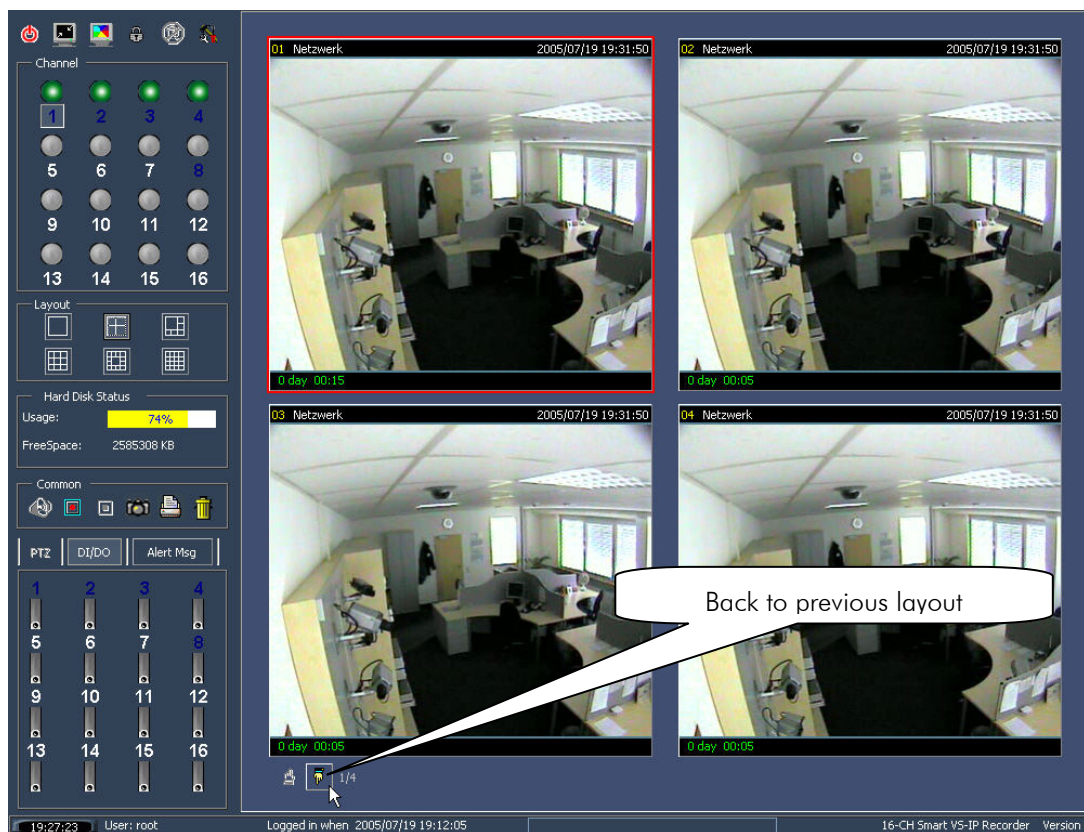
If you want to view pictures from a camera in a multi-camera layout, double-click the display window of this channel in the video area. The display window is now the same size as for a single frame view. Click **Back** in the top left corner of the video area to return to the previous multi-camera layout. You can use this function only for miniature views of a multi-camera layout. If the pictures are the same size, the function is disabled in the top left picture (4, 9, 16 pictures).

The position of each channel in all views remains the same if this view is selected again later.

Input/output control tool
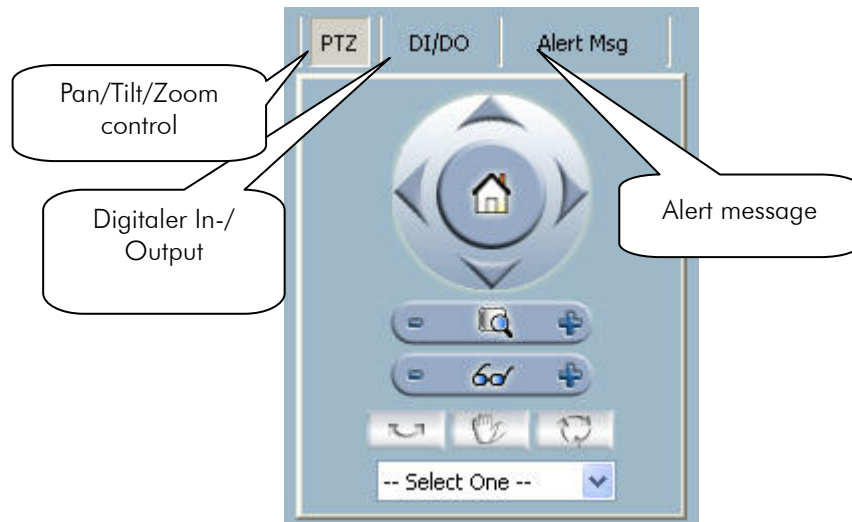
The application software provides three other utilities for monitoring the video servers / network cameras of the connected channel. Click the respective button to change to the different control programs: PTZ (Pan/Tilt/Zoom) control, DI/DO (Digital Input / Digital Output) control, and warning messages.

PTZ control (Pan/Tilt/Zoom)
If the video server / network camera supports the PTZ function, the PTZ control tool is activated. You can perform PTZ operations and select preset locations. You can also use PTZ functions simultaneously on different cameras.
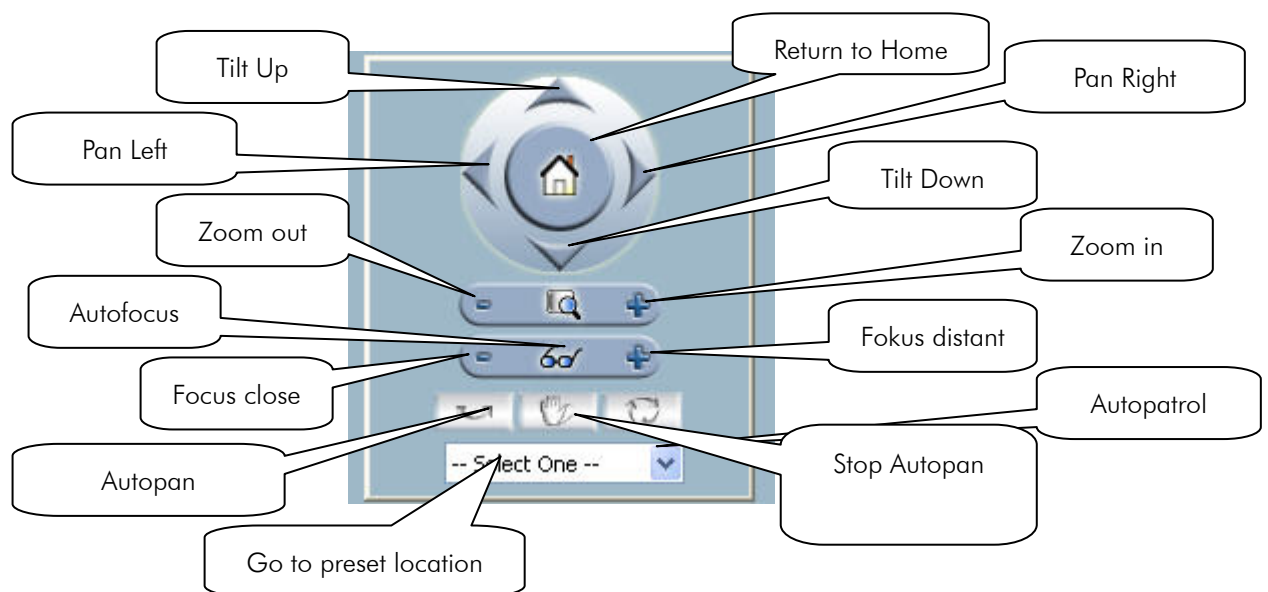
<u>DI/DO control</u>

Click the **DI/DO** button to open the DI/DO control panel. Only users with administrator privilege have access to the DI/DO control of the remote video server / network camera. The colour of the channel number shows the state of the DI (digital input) of the channel. Click the **Switch** button to switch between HI/LOW state of the DO (digital output). These properties enable you to monitor the DI and set the DO state.
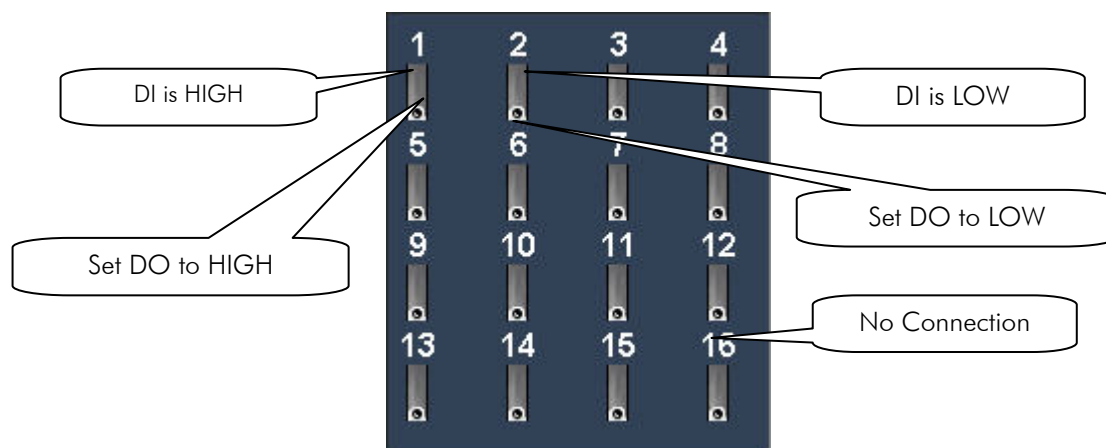
The DI colours have the following meaning:

- Off (grey)

    If the channel number is grey, there is no connection to the video server /   network camera.

- Red

    The DI of the video server / network camera on the selected channel is HIGH.

- Blue

    The DI of the video server / network camera on the selected channel is LOW.

Warning messages

```
11:54:00=>MO #6(1,0,0)
11:54:00=>MO #6(1,0,0)
11:54:03=>MO #6(1,0,0)
11:54:03=>MO #6(1,0,0)
11:54:04=>MO #6(1,0,0)
11:54:06=>MO #6(1,0,0)
11:54:08=>MO #6(1,0,0)
11:54:12=>MO #6(1,0,0)
11:54:13=>MO #6(1,0,0)
11:54:14=>MO #6(1,0,0)
11:54:18=>MO #6(1,0,0)
11:54:20=>MO #6(1,0,0)
11:54:23=>MO #6(1,0,0)
11:54:25=>MO #6(1,0,0)
11:54:26=>MO #6(1,0,0)
```
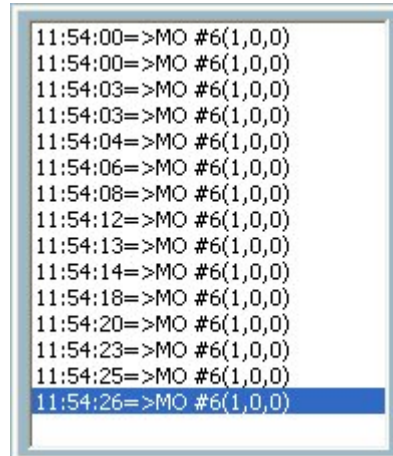
If motion detection or alarm input is active, an alert message appears in this field if an alarm is triggered by a user-defined movement or by a change in the digital input level. Use the scroll bar to view earlier alert messages.

The message consists of two parts, the time and the channel:

time=>alarm type #channel number(window1,window2,window3)

The message "11:54:00=>MO #6(0,1,1)" means that an alarm event triggered by a movement ("MO") occurred at 11:54:00 hours in display windows 2 and 3.
The message "14:41:56=>DI #1" means that an alarm was triggered by the first DI at 14:41:56 hours.

Talk Control

Talk control is shown as follows:

Talk available

Talk unavailable

No Connection

No connection

Talk volume setting
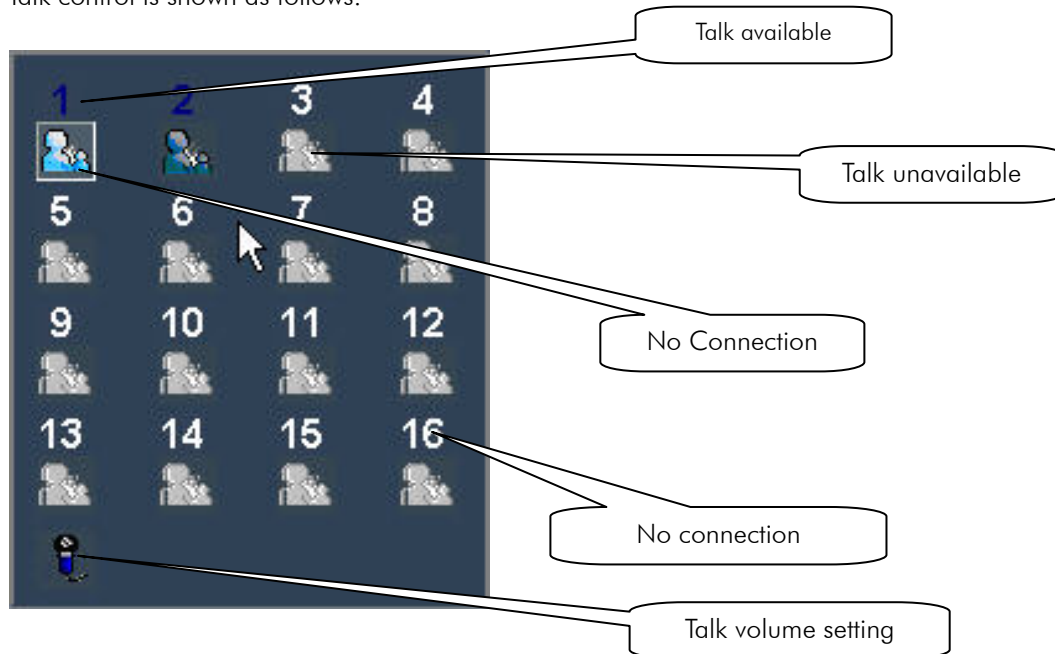
Talk available

When the connected videoserver/network camera product supports the feature of 2-way audio, talk with remote side is available. User can click the button to establish talk channel.

Talk unavailable

Talk may be unavailable if the connected Videoserver/Network camera product doesn't support 2-way audio feature.

Talking

The state means that the channel is talking with remote side now. You can adjust volume by using Volume setting tool or stop talk by clicking the button again.

Talk volume setting

User can adjust the volume of talk by using this tool. Click the button and the volume window will be invoked.

Backup
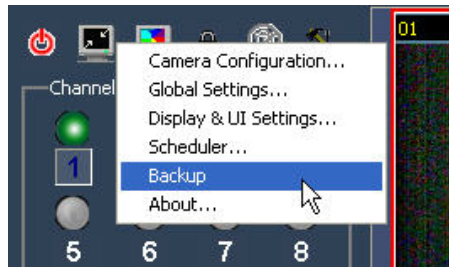
Click **Backup** to copy a recorded video to another medium, according to the size and storage location that you define. You can save the video data manually to any portable storage medium (e.g., CD-ROM, ZIP disk, DVD-RAM or tape).

After configuring the backup settings, activate the backup operations by clicking **Configurations \ Backup** (see above). Once the backup process has started, you cannot configure the video server / network camera or make local settings. To stop the backup process, click **Configuration/Cancel Backup** and select the status of recording progress. A message tells you that the backup is complete.

About
Click **Configurations \ About…** to display a field containing information such as the product name and version, user information and the serial number.
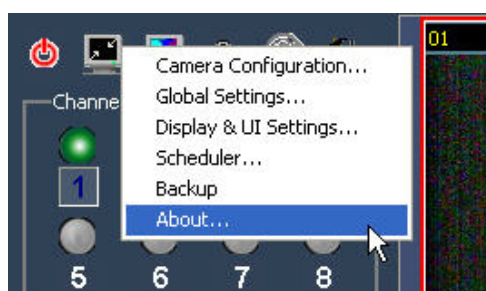
Miscellaneous functions
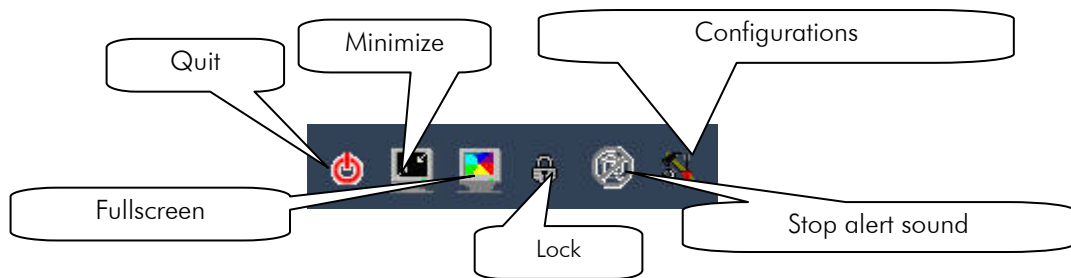
This section describes other functions represented by icons. These functions can be used independently of the channel selected.

 Quit

Click this icon to exit the program with the settings last saved.

 Minimize

Click this button to minimise the monitor window.

 Fullscreen

Click this button to display the selected channel in fullscreen mode. To return to the original layout, press **Esc** (in the top left corner of your keyboard).

 Lock

Click this button to lock the program. In locked mode, the main window is hidden and a dialog box opens. To return to the main window, you have to enter the administrator password again.

 Stop alert sound

If an alarm is triggered for which an alert tone is set, the alert tone sounds. Click this button to stop the alert sound and switch from the DI/DO control panel to the alert messages tool.

 Configurations

Click this button to access the **Configuration Menu**, **Common Settings**, **Scheduler**, **Backup** and **About** options.

Common control functions
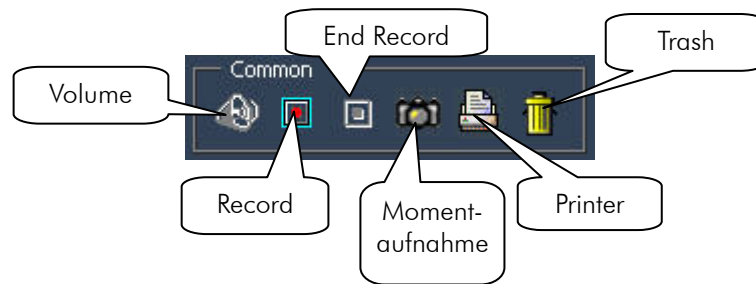
This section describes the common control functions represented by icons. These functions can only be used for the currently focused channels.

 Volume

Click this button to regulate the volume (if the camera supports audio functions).

 Record

Click this button to manually activate video recording for the selected channel.

 End Record

Stops recording for the selected channel, irrespective of whether the recording was triggered by an event, a schedule or manually.

 Printer

Click this button to print all views visible on the current screen.

 Snapshot

Click this button to make a snapshot of the selected channels and save it as a bitmap file on the hard disk. You can select the folder where the bitmap file is saved in the **Configurations** menu under **Global Settings**.

 Trash

You can move a channel to the trash can using Drag and Drop. This does not close the video connection to the remote video server / network camera, but the channel is no longer shown in the current layout.

<u>Multiple focus</u>

Some functions can be used for two or more cameras simultaneously, such as PTZ monitoring, volume regulation, recording, stop recording, printer and snapshot. First select the cameras for which you want to make settings, and then perform the functions (PTZ monitoring, recording, etc.). To select more than one camera, press the **Ctrl** key and click the respective display windows in the playback area. You can NOT make multiple selection in the channel operating field, but only for camera of the same layout.

Status line
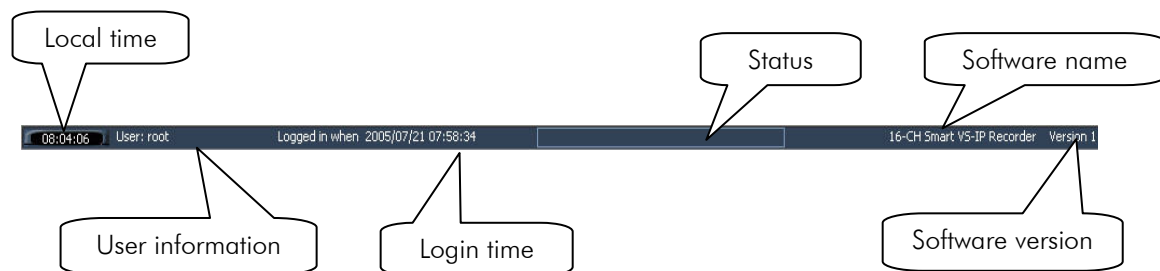
Local time – shows the current time at this location.

Current user – shows the current user name.

Login time – shows the time when the current user logged in.

Status – displays information on background operations such as repairing the database or locations.

Software name – displays the software name of this application.

Software version – displays the software version of this program.

Scheduler

The scheduler helps you to schedule the recording time of selected channels. You can schedule recording for every channel via the graphical user interface or the period selection function.

Scheduler features:

User-friendly graphical user interface

Flexible planning schemes suitable for almost every requirement

Individual scheduling for each channel

Automatic periodic recording

Starting the scheduler
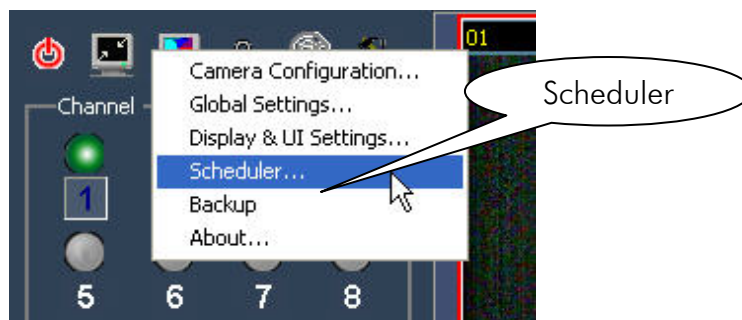
To start the scheduler, the camera list must contain at least one camera. Click **Configurations \ Global Settings \ Directory Settings** to select the database directory for schedules and the recording directory. After making these settings, click **Configurations \ Scheduler…** to start the scheduler.

Layout and functions

This section describes the layout and functions of the scheduler.

Introduction

The figure below shows the arrangement of the scheduler elements.

The layout is divided into four areas:

At the top of the scheduler, you select the cameras. This area contains IP addresses and location information of the connected channel. You can select a channel here for which you want to define a schedule.

The second area, under **Primary Schedule**, contains settings for the primary schedule. In this section, you can set the day and week, the start and end times, and the mode that triggers alarms (e.g., motion detection).

The third section is the **Secondary Schedule**, consisting of event-controlled settings. It also contains options for adjusting the schedule of the selected channel.

The fourth section contains buttons for saving, loading and undoing settings, and a button to close the scheduler.

Functions of the configuration components

If you click a line to select a channel, the scheduler automatically loads the schedule assigned to this channel. Note that when you switch between channels, changes to the schedule are temporarily saved in the system. To save your settings permanently, click **Save**.

Schedule

The next figure shows the six scheduler buttons for defining the schedule: **Load**, **Undo**, **Clear**, **Save**, **Save as**, and **Close**.

Load…

Loads schedules from the specified directory. Any settings you have made must be saved before you press this button. Otherwise all changes are lost.

Undo

Undoes all entries in the current schedule made since it was last saved.

<u>Clear</u>

Deletes all entries in the schedule of the selected channel that you have just edited.

<u>Save</u>

Saves changes to the current schedule.

<u>Save as…</u>

Saves changes to the current schedule under a different file name from the current file name.

<u>Close</u>

Closes the scheduler. All settings are lost unless you first save them.

<u>Primary Schedule</u>

Scheduling with the time scale

There are two time scales: the hour scale and the week scale. By marking entries in these time scales, you can set up your own schedule. The two time scales are connected. That means that if you make changes in one time scale, they are used and displayed in the other time scale of the same schedule.

<u>Week scale</u>

The next figure shows the week scale. This consists of the specification time scale, the scheduling information and the selected weekday.

<u>Marking the recording time</u>
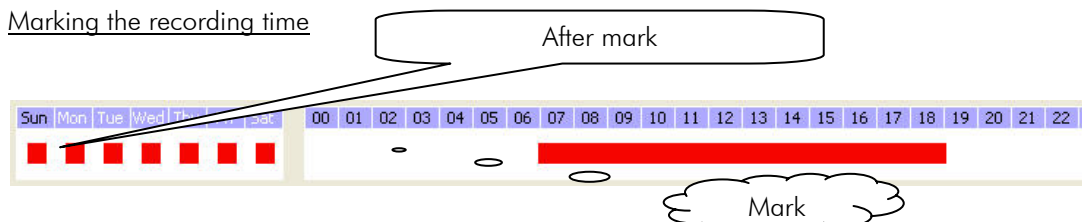
The marks set in the week scale are automatically added to the hour scale. You can also set or delete marks with the left and right mouse buttons.

Hour scale

The next figure shows the hour scale. This contains the specification time scale and the scheduling information.

Marking the recording time

Use the left mouse button to mark times on this scale. Settings on the hour scale are made in the same way as on the week scale.

Scheduling with the time selector

Start and end time

There are three selection boxes for **Begin** and **End** times. Set the weekday in each of the first boxes.

Set the hour and minute in each of the second and third boxes.

NOTE: The **Begin** time must precede the **End** time. Otherwise, recording is made over two days.

After selecting the **Begin** and **End** times, you choose the period for which they are to apply. Click the **Apply** button to save these three settings. To delete all settings you have just made, click the **Delete** button. All new scheduling information takes effect only after you click **Apply**.

Scheduling in event-controlled mode

In the mode field, you can select either event mode or continuous mode. There are two kinds of event-controlled recording.
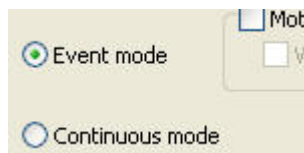
Motion detection
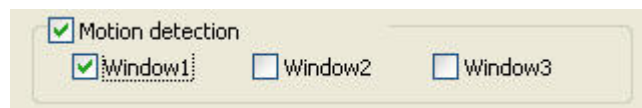
The figure above shows the selection of the window (1-3) from which recording is to be made if motion is detected.

Digital input

The **Digital input** button is accompanied by four selectable conditions of the digital input signal that trigger a recording start. Select a condition.

high: The event is triggered by a digital HI input signal.

low: The event is triggered by a digital LOW input signal.

rising: The event is triggered by a rising digital input signal.

falling: The event is triggered by a falling digital input signal.
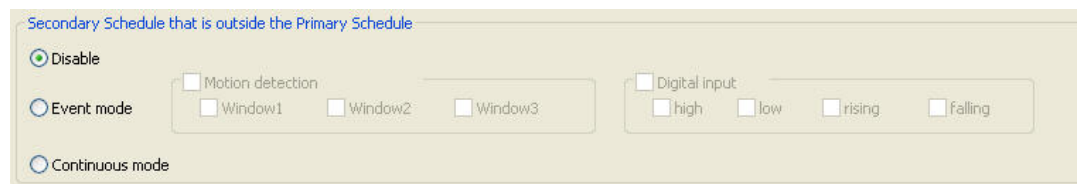
Scheduling in continuous mode

If you select **Continuous mode**, recording is made regularly according to the user-defined schedule.

Secondary Scheduler

The secondary scheduler is for times other than the times defined in the primary scheduler.

Scheduling mode

You have three options: **Disable, Event mode** and **Continuous mode**. Set event mode and continuous mode as in the primary scheduler.

<u>Playback mode</u>

Features of playback software

The playback module of this software is efficient, user-friendly and convenient. You can use it to search the video database. Three display modes are available – normal, event-related and three playback modes.

<u>List of features</u>

Playback

      Playback from beginning, stop, pause

      Forward

      Fast playback (from x1 to x16)

      Slow playback (from /1 to /16)

Display: customising the display of the video playback

      Zoom in (from 1:1 to 2.25:1)

      Zoom out (from 1:1 to 1:2)

      Fullscreen

Search tools

      User input (from total range down to one second)

      Zoom in (from total range down to ten seconds)

      Zoom out (up to total range)

      Page-by-page search

      Total range

Miscellaneous

      AVI file converter

      BMP file snapshot

      Direct output to printer

      Volume control

System control

      Lock

      System settings

      Minimise

Miscellaneous

      Location selection

      Alarm window selection

Logging in

The authentication prompt (login window) is part of the Launcher. If you have authenticated yourself there, you can start playback without further security queries. Otherwise the Launcher login window appears in which you have to authenticate yourself.


Overview
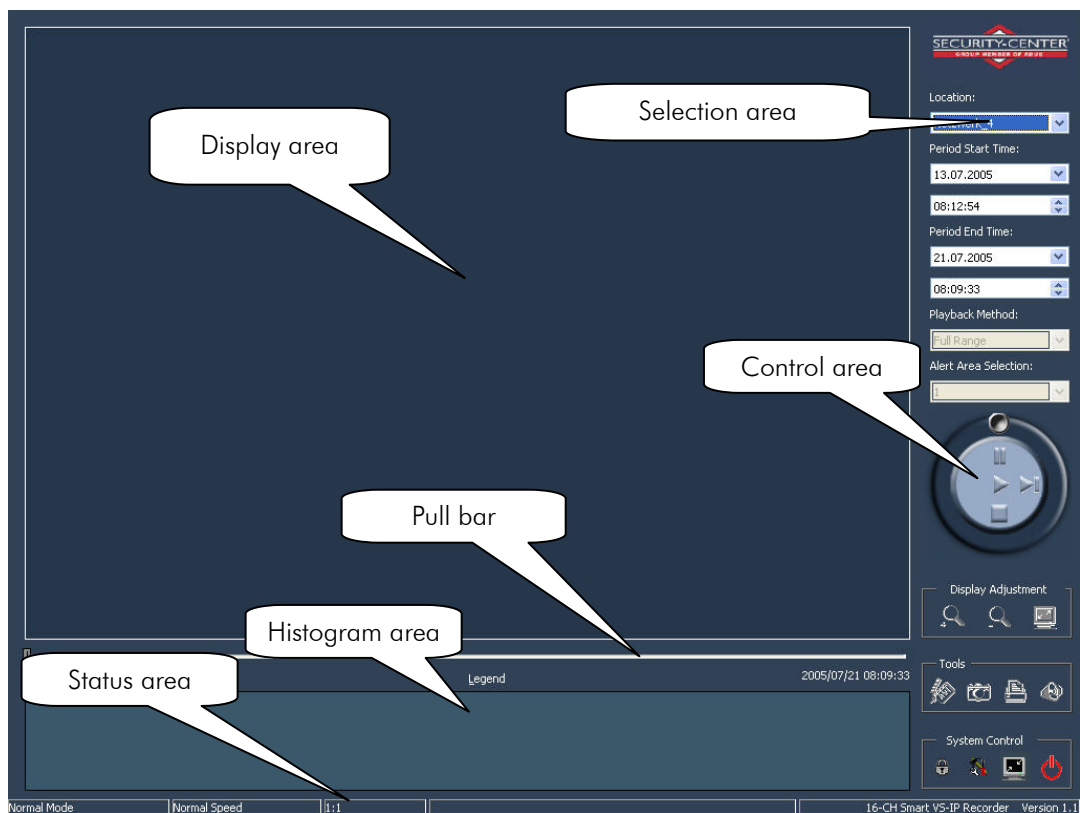
When you log in, the main window opens and the screen resolution is automatically set to 1024x768 if the previous resolution was less. This window has four main areas: the display area, the histogram field, the control area and the status area. There are also three visual indicators: the range selection indicator, the selection area and the pull bar (slider). These features enable you to make an efficient search for specific videos in the surveillance database.

Areas

Display area

You can display the saved video data in three ways: Event-related, alarm-related and time-related. You can set the video size with the display settings.
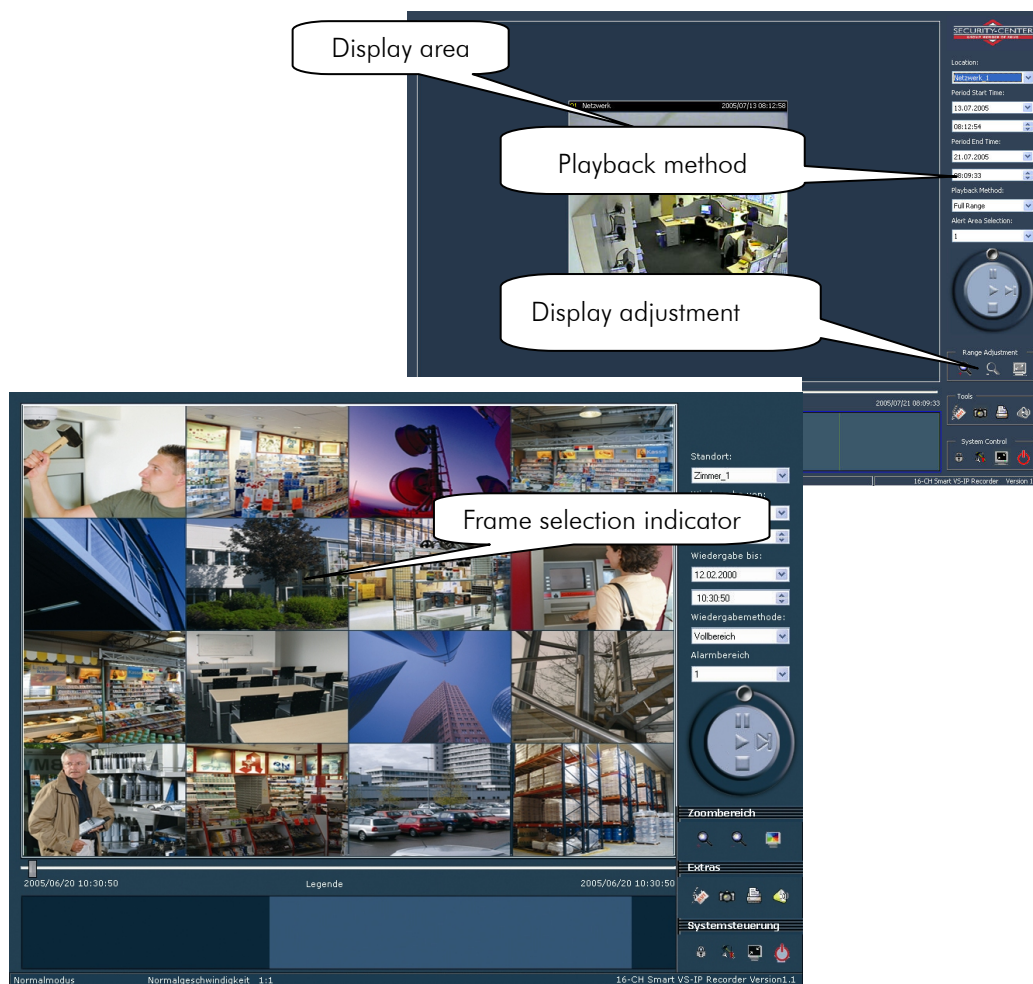
Histogram field

The histogram is an interactive display with which the position in the time domain of the event and the motion percentage can be displayed. From the histogram field, you can select a group of events or a specific period.

Picture selection frame

The functions of this control area are used primarily for a database search (except for the page selection function). The page selection function is located in the bottom right corner of the display area when the program is in event preview mode. The control tools are: location selection, period selection, playback method selection, the navigation wheel, display adjustment, search range setting, export and system control.

Status line

The status line is at the bottom of the main display field. It displays all program status information: the display mode, the display size, the speed, and the format and name of the export file.

Indicators

Range Adjustment indicator

The **Range Adjustment** indicator is under the playback control in the Control field. It marks either the display area or the histogram field. Move the mouse to the range you want to select. After you select a display range, the **Range Adjustment** tool opens in the control field. If you select the histogram range, the **Display Adjustment** tool is replaced by the **Range Adjustment** tool.

Selection frame

The selection frame appears only if display mode is changed to event preview mode. It is a red rectangle surrounding one of the nine event preview frames. If one of the display options (i.e., one of the frames) is selected, the playback status can be controlled using the navigation wheel in the control area.

<u>Slider</u>

The slider is a fast, flexible tool in the search for specific data of a selected period. You can position the slider over the whole length of this period to define a start time from which the video recording is to be played. If playback is interrupted, the time you selected is shown on the display area. The slider works under the normal display mode only.

Settings

If you click **Settings** in the system control, the dialog box opens.
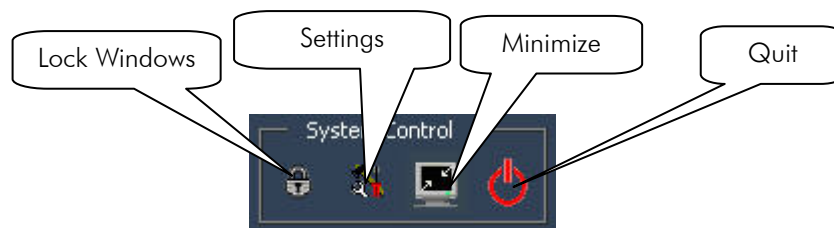
<u>Database location</u>
Setting the database path is the most important function in the **Settings** dialog box. Specify the directory containing the surveillance database (normally **Record**).

<u>AVI files location</u>
Select the storage directory for exported AVI files. The exported files are saved in a subdirectory of the directory you select here.

<u>Snapshot files location</u>
Select the directory for snapshots. The exported bitmap files are saved in a subdirectory of the directory you select here.

AVI Compressor

We use a colour depth of 24 bits to export AVI files in this mode. When selecting the AVI compressor, you can choose a compression method supported by your computer (both video and audio). Due to different compression methods, this can vary from computer to computer.

Modulation Mode

The modulation mode defines the video size on the screen. It is determined by how the video sequence is recorded in the monitor program. If the wrong modulation mode is selected, the video is distorted. To correct this, always select the right mode (European PAL Standard).

Control Panel Position

You can position the control panel according to your preferences, either on the right or the left of the main window.

Time Format

There are two kinds of time format (12-hour, 24-hour) that can be selected by user to determine the time format in the upper statur bar of display area.

Snapshot Format

Two formats (jpg, bmp) can be selected by user to determine the file format of snapshot.

Normal playback mode

There are different methods of starting video sequences in normal display mode:

(1) Change the database path to the required sequences in the **Settings** dialog box.

(2) Change the location via the **Location** field in the control field.

(3) Set the playback method to **Full Range**.

(4) Set the playback method to **Time Period**.
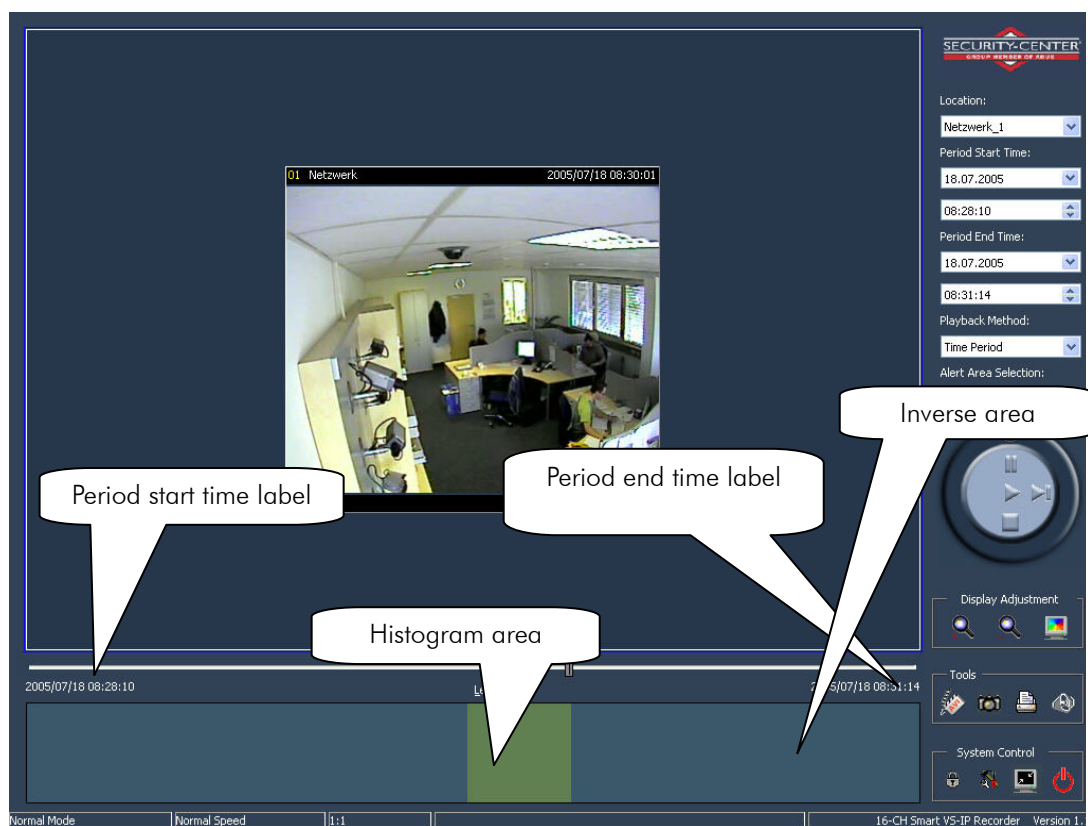
In normal display mode (single frame), you can use all playback tools except frame selection. In this mode, the start and end times of the respective time period are displayed under the slider.

Histogram field
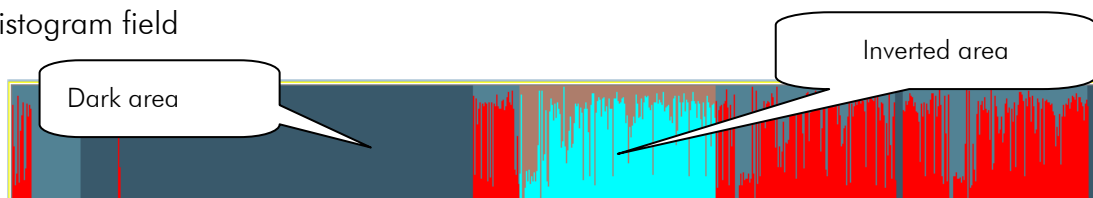
The histogram field of the normal display shows only the time of the event and the percentage of detected movements as a red bar. To access the histogram field, set the range selection indicator to Histogram field. You can mark a period you want to view by dragging the mouse pointer with the left mouse button pressed over the histogram. The selected area appears inverted. If you release the left mouse button, the marked selection replaces the initial period that the program showed before. If you click with the left mouse button but do not keep it pressed, and then drag the mouse pointer across a selection area, the same happens as when you click the slider. That means: playback jumps to the marked time and shows the video in the display field. The dark areas of the histogram contain no video data. If you click these areas, a warning message is displayed.

Preview (multiple display) mode

You can switch to preview mode only if you first set the playback mode to **Event Preview**. This mode helps you to find the cause of an event – not only by the time and alarm percentage in the histogram field, but also when playing back the actual video. In this way, you can easily tell the difference between different alarm situations. In the event preview, the slider, the data converter in the export toolbox, and the toolbox for setting the screen display are inactive. The two displays under the slider show the numbers of the displayed events and the total number of events. There are nine display frames, called pages. Each displayed event is at least 10 seconds long. Use the **Page up** and **Page down** buttons in the page selection to page through all events of a selected period; you can view up to nine events per page. The page status shows you the current page and the total number of pages (see next figure).
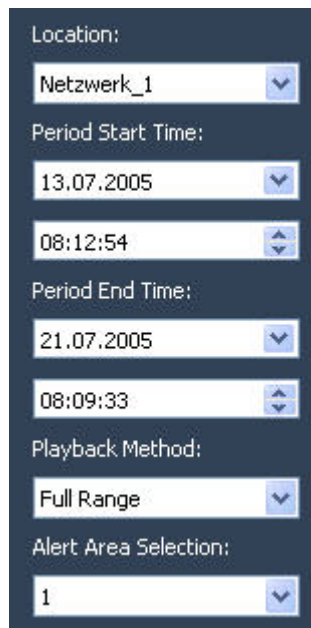
Histogram Legend

If you click **Legend** over the histogram field, a box opens explaining the meaning of the colours of the histogram.

Tools in the control field

This section tells you how to use the tools in the control field.

Selection tools

The next figure shows the selection tools: location, start time (for selecting the start time of a period), end time (for selecting the end time of a period), playback method and alert area.

Location

Select the camera whose pictures you want to see. The location information is the same as the location name assigned to the respective channel in the monitor program. If there is more than one time period for the same location, another dialog box opens. In this dialog box, select a time interval. If the selection is correct, playback switches to this location and starts playing back.

Period Start Time / Period End Time

Select the start and end times of a new period. The end time must be later than the start time. After specifying the start and end times, click the playback button on the navigation wheel. The system plays the contents of the new period in the display area and changes the information in the start and end time legend. The slider and the histogram field are also changed. If the selected time is not available in the database, the data of the period selection is reset to the last correct period and a warning message appears.

Playback Method

Full Range

Displays the complete database from start to finish. Any change in the period selection is ignored if you do not change **Full Range** to **Time Period**.

Time Period

If you change the playback method to **Time Period**, you can select the start and end time in the period selection. If you click the playback button in the navigation wheel, the time interval you select is displayed.

Event Preview

This changes the display mode from normal display to event preview and vice versa.

The program saves the previous start and end time settings in **Time Period** mode. If you want to change the period selection, you first have to select the playback method to change to the mode you want to use. Otherwise, the period selection is reset to the time interval that was valid when you last saved the playback method.

Alert Area Selection

In preview mode, playback displays only one type of alarm event at a time. If you want to view other types of events, change the event type under **Alert Area Selection**.

In normal display mode, the currently displayed alarm type is marked by a red rectangle. If you change the channel, the entry under **Alarm Area Selection** is reset to the default settings.

Playback control

Playback is controlled by a navigation wheel. All buttons except the playback button can control the video recordings in normal display mode and the selected video recordings in the event preview.
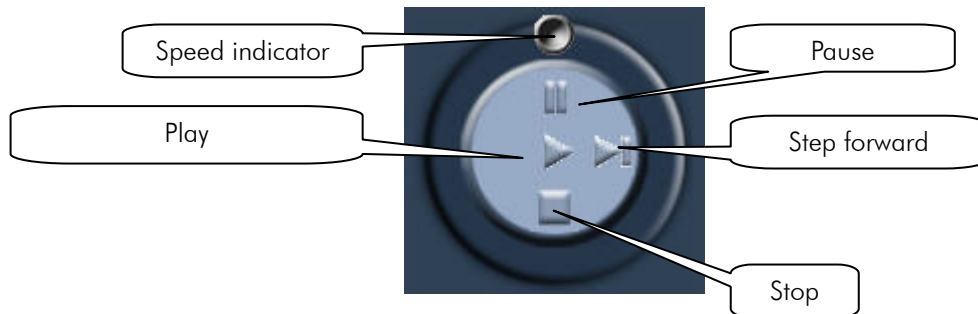
Playback from the beginning

The function of the playback button varies according to the selected mode. In normal display mode, clicking the playback button starts playback of the video sequence from the beginning again. If the period has not been changed, clicking the playback button in preview mode also restarts playback in the selected display frame. If the period selection has been changed, clicking the playback button starts display of the first nine events of the new time interval in all display frames.

Stop

To stop playback of the video sequence, click the stop button. The start point is then reset to the start of the currently selected time interval.

Pause/Continue

The pause button temporarily stops playback of the video sequence. Press this button again to continue.

Step forward

This button is active only when the video is paused. Each further click on this button displays the next frame.

<u>Fast and slow playback</u>

The playback speed can be increased or decreased by any factor up to 16. This function gives you more flexibility in paging through your surveillance database. To change the playback speed, just rotate the speed indicator. To increase the speed, rotate the indicator in a clockwise direction. To decrease the speed, rotate the indicator in an anticlockwise direction. The current speed is shown in the second column of the status line.

Display Adjustment

With this toolbox, you can adjust the displayed video sequence in normal display mode to the required size.

Zoom in

Each click on the zoom in button increases the frame size in the display area by 12.5% of the original size. Due to limitations in the display area, the maximum enlargement factor is 2.25:1 for the NTSC modulation mode and 1.875:1 for the PAL modulation mode. To see further picture details, use the fullscreen function in this toolbox.

Zoom out

Each click on the zoom out button decreases the frame size in the display area by 12.5% of the original size. To allow full display of location and time, the maximum reduction is 0.5:1.

Fullscreen

Click the fullscreen button to fill the screen with the video sequence. To return to the initial display, double-click the display or press **Esc**.

Range Adjustment

If you move the mouse pointer over the histogram field, the **Display Adjustment** toolbox is replaced by the **Range Adjustment** toolbox. You can now quickly change the range of the displayed time interval. With this toolbox, you can page through the database of a recording location.

Zoom in

 Each click on the zoom in button halves the length of the display period until the minimum period of 10 second is reached. The new time interval enables you to see more details. The scales of the slider and the histogram field as well as the displayed start and end times of the time interval are changed accordingly. The new start and end times are also displayed. In the display area, the display of the new time interval is started from the newly defined start time.

Zoom out

 Each click on the zoom out button doubles the length of the display period until the start or end time exceeds the time limits of the recording location. The scales of the slider and the histogram field as well as the displayed start and end times of the time interval are changed accordingly. The new start and end times are also displayed. In the display area, the display of the new time interval is started from the newly defined start time.

Total range

 Clicking the total range button has the same result as in playback mode.

Tools

Data converter

 Use the data converter to convert the played-back video sequence into an AVI file. Click the data converter button to start conversion. The speed of data export depends on the speed of your computer. You can stop export at any time during data conversion by clicking the data converter button again. You get an AVI file containing all data between the start time and the time you stop export (with the second click). To change the output directory for AVI files, open the **Settings** dialog box. For a better quality of the AVI files, set the video format to normal size.

Snapshot

 Every time you click the snapshot button, a bitmap file is exported. In the normal display, the picture shown in the display area is exported as a bitmap. In preview mode, the picture selected by the selection frame is exported. The bitmap size corresponds to the original size of the selected picture. The name of the exported bitmap file is generated automatically and listed in the fourth column of the status line.

Printer

 If you click the Printer button, a dialog box opens. After you have made your settings and sent them to the printer, the pictures in the display area are printed. The data printed is therefore identical to the data in the display area.

Volume

 If you click the Volume button, a dialog box opens in which you can set the volume. The volume increases or decreases immediately after you have made your changes. You can also mark **Mute** to switch off the sound.

System Control

The system control tools provide basic functions for the playback software.

Lock window

If you have to leave your workplace, you should lock the playback window for security

reasons. Just click the "lock window" button to lock the window.

The main window is now hidden and a login dialog box opens.

To return to the main window, you have to enter the administrator password again.

Settings

Click this button to open the **Settings** dialog box.

Minimize

Click this button to minimise the playback window. To open the playback window again,

either click the program icon in the task bar or select **Playback** from the Launcher.

Exit

Playback stops when you click the exit button. If a data converter process is still running,

this is completed first.

DIGI-LAN

Manual fort he Installation Wizard

Installation

Install Software

Following are the steps for the software installation.

Put the Installation disk into the CD-ROM drive, and the installation should start automatically. If the installation does not start, click on "Start" on the lower left corner of your screen, open "My Computer" and double click on the CD-ROM icon. The Installation Wizard Installation Window will appear.


1. There are links on this page, including Quick Guide, User's Manual, Release Note, and Software DVR.

2. Click on "Installation Wizard" to launch the setup program.
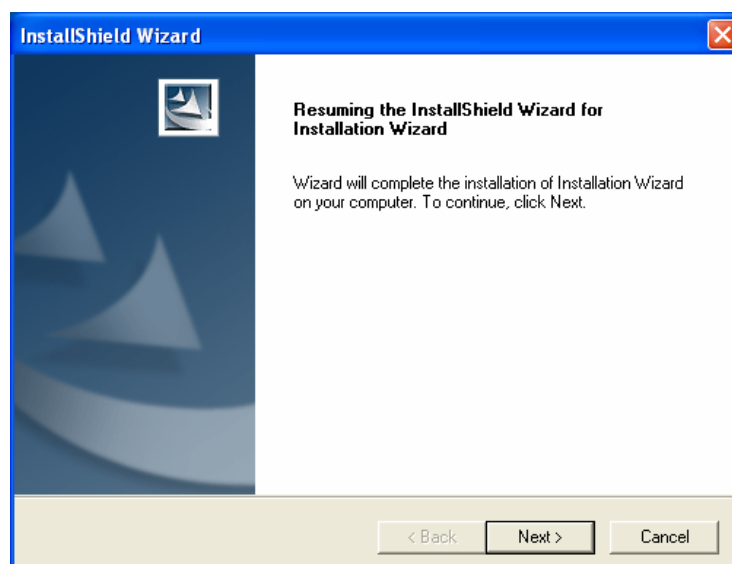
Select the installation directory for this application software and click on "Next". You can also change the installation directory from the Default directory by clicking on "Browse…"
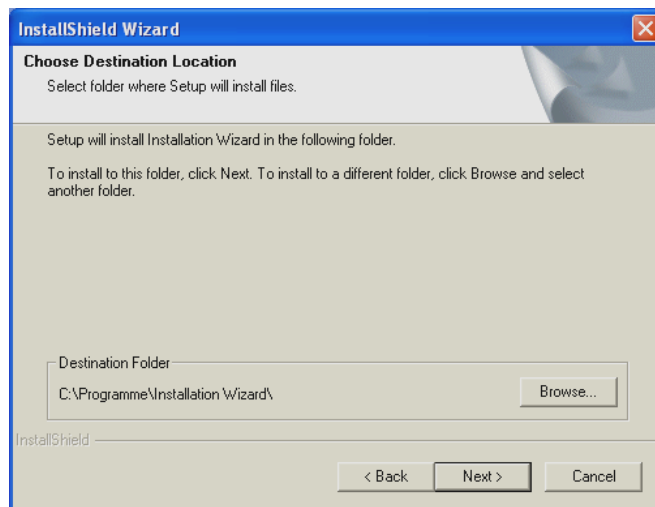
Select a program folder to install the application software into and then click on "Next".
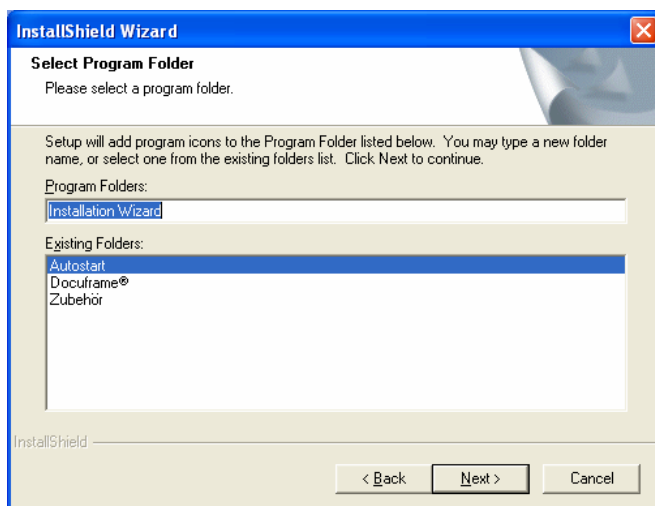
Click on "Finish" to finish installation. This completes the installation.
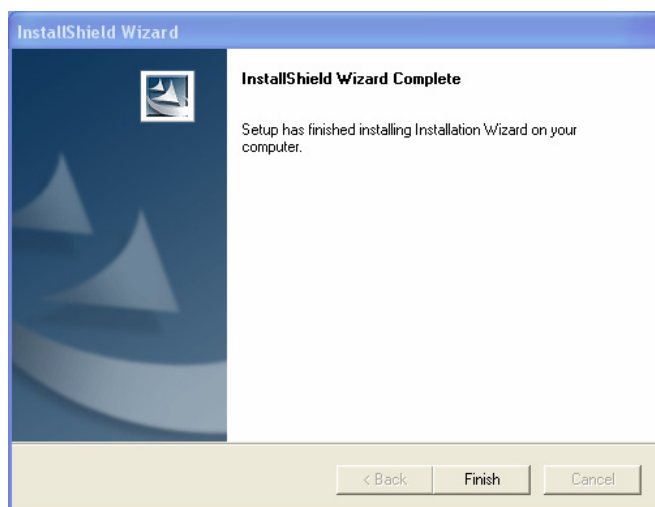
Usage

User Interface

Once you run the Installation Wizard, you will see the user interface. You can click on the device list to select device. The three buttons (Setup, Upgrade, and Reset to default) won't be enabled until you select at least one device.

InstallWizard allows you to setup or upgrade multiple devices (of the same model) at the same time. If you selected different models, then the buttons will be disabled.

Action buttons
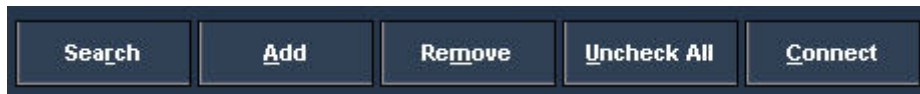
Search

Click on this button to clean up the device list and search all devices on the Intranet again. It will take about 5 seconds.

Add

To setup or upgrade the devices that are not on the same intranet with Installation Wizard, please click on this buuton to add them manually. Click on this button will popup a dialog. You can input the IP address or the domain name and click on Ok to add the device into the device list.
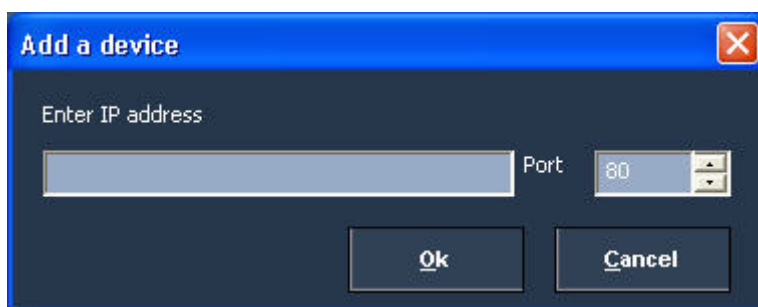
Remove

Click on this button will remove all the selected devices from the device list. The devices that you remove might be show up again if you click the search button or add them into list manually.

Uncheck all

While you selected several devices, this button allows you to uncheck all the selected devices by one click instead of uncheck the selected devices one by one.

Link to selected device(s)

Click on this button will open the web browsers to link to all the selected devices. (One browser per devices)

Function buttons

<u>Setup</u>

Click on this button to modify the settings of the selected devices.

<u>Upgrade</u>

Click on this button to upgrade the firmware of the selected devices.

<u>Reset to default</u>

Click on this button to load the factory default value of the selected devices.

<u>Exit</u>

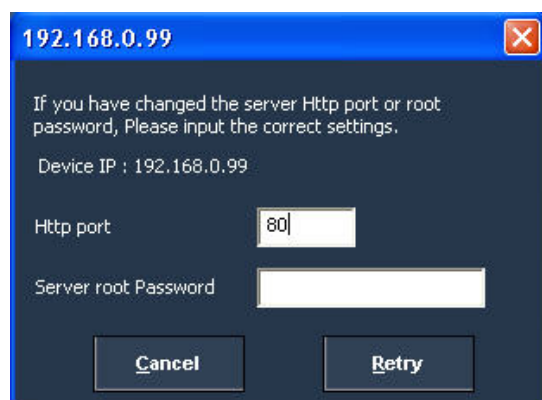Click on this button to close the Installation Wizard.

<u>About</u>

Click on this button to get infomation about the Installation Wizard.

<u>Hardware Setup</u>

Setup

When you select one or multiple devices (of the same model), the **"Setup"** button will be enabled. Click on it to modify the settings of the selected device(s). After clicking on the **"Setup"** button, Installation Wizard will try to connect to the selected device(s). If the authentication is failed, it will popup a dialog to ask for correct password and http port number.

System Setting

After connected to the selected device(s), it will switch to system setting page.

"Back"
Click on this button to back to the previous page or main page

"Next"
Click on this button to keep the settings and go to the next page.

"Skip"
Click on this button to discard the settings of the current page and go to the next page.

Change of the host name

The **"host name"** is used for the homepage title of main page and is displayed as the title over the video window on the main page. The maximum string length is 40 characters or 20 characters in double-byte-character-systems like Chinese or Japanese.

Change root password

To change the administrator's password, type the new password in both root password and confirm password text boxes identically. What is typed will be displayed as asterisks for security purposes. The maximum password is 14 characters.

Adjust date and time

There are three ways to adjust system date and time. The easiest way is to make Network Camera **"Sync with computer time".** The second way **"Manual"** is to set the date and time manually by entering new values. Notice the format in the related field while typing. The third way **"Automatic"** is to make Network Camera automatically synchronize with timeservers over the Internet every hour.

Network Setting

In this page, you can change the server's IP address, subnet mask, default router, primary dns, and secondary dns.

Fix the IP address

Check **"Reset IP address at next boot"** will force Network Camera to reconfig its IP address whenever it reboot. If you want the Network Camera to use a fixed IP, please uncheck the **"Reset IP address at next boot"** and assign a valid IP address. If you select more than one device, changing the IP address is not allowed and the IP address field will be disabled.

Basic Network Settings

You can setup the network setting by this page. Usually this is no need to be changed, if you do change it please make sure you input the correct setting or the device may not be reachable. If the device is directly connected to the camera, please type in a suitable default-router-IP which is in the same subnet like the camera.

Click "Next" when you have finished the configuration.

Wireless settings (TV7204)

This configuration page is availlable at TV7204 only. Please use a network cable fort he initial installation of the camera. If you want to change the wireless settings at this time please read the pages at „Wireless setup" in the user manual of the camera TV7204. Please check the settings before applying to the camera.

Apply to selected device(s)

After configuring all the settings, the apply page will show up). Click on **"Apply"** button to apply the changes to the selected device(s) or click on **"Previous"** button to back to the previous page and modify the settings.
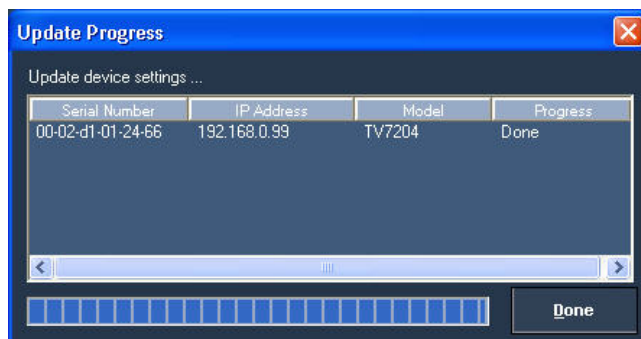
Click "Done" and the installation is finished.

Firmware upgrade

Initialise the uprgade

When you select one device or multiple devices (of the same model), the **"Upgrade"** button will be enabled. Click on it to upgrade the firmware of the selected device(s). After click on the **"Upgrade"** button, Installation Wizard will try to connect the selected device(s). If the authentication is failed, it will popup a dialog to ask for the correct password and http port number.

Device Information

After connected to the selected device(s), it will display the information page. If you select more than one device, then the device info will show all the selected devices. You can switch to the server info by clicking on the Tab control or double clicking on the device list.

Package Information

The package information will show the information about the file that you selected:

Firmware version:	The version number of the selected firmware.
Supported script version:	The maximum script version that firmware can support.
Web page version:	The version number of the web page.
Script version:	Script version used by web page and server script.
Viewer plugin version:	The version number of the viewer plugin.
Upgrade plugin version:	The version number of the upgrade plugin
Supported language:	The language that the selected file supports.

<u>File Selection</u>

You can use the file combolist to browse the file that you want upgrade onto the selected device(s).

After selecting the file, Installation Wizard will check whether the file you selected is correct. If it is correct, then the package information will display the information about the file and enable the **"Upgrade"** button. Therefore you can click on the button to upgrade the firmware. If it is not correct, then it will popup a warning message.
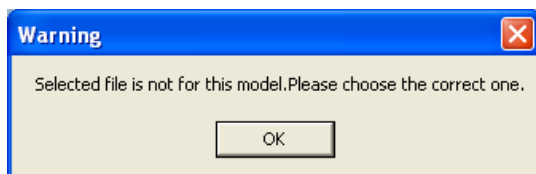
Upgrade

Click on the **"Upgrade"** button to upgrade the firmware of the selected device(s). It will popup the dialog to show the progress of the upgrading process. After the upgrade process is done. Click **"Done"** to finish.

Further Information

Further information can be found in the installations and users manuals of the different products. Please refer to them first, before calling our technical support. Assistance by phone is avaible through the regular working hours or by Email.